

ARTICLES

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Federalism Fails Water: A Tale of Two Nations, Two States, and Two Rivers

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δὺς ἐς τὸν αὐτὸν ποταμὸν οὐκ ἂν ἐμβαίης
*You may not step twice into the same river.*¹

* * *

*The powers delegated . . . to the federal government are few and
defined. Those which are to remain in the state governments are
numerous and indefinite.*²

* * *

*There shall be no private ownership of the streams that come out of
the canyons, nor the timber that grows on the hills. These belong to
the people: all the people.*³

* * *

*Unless we use our water more sustainably and manage it more
inclusively, we may indeed see more water-related conflict within
countries than between them.*⁴

¹ Heraclitus as quoted in PLATO, PLATO VI: CRATYLUS. PARMENIDES. GREATER HIPPIAS. LESSER HIPPIAS. 66–67 (E. Capps, T.E. Page & W.H.D. Rouse eds., H.N. Fowler trans., 1926) (translation altered).

² James Madison, *The Federalist No. 45*, at 237–38 (Max Beloff ed., 1987).

³ ROBERT GOTTLIEB, A LIFE OF ITS OWN: THE POLITICS AND POWER OF WATER 204 (1988) (quoting Brigham Young) (emphasis added).

⁴ Scott Moore, *Letters to the Editor*, ECONOMIST (Mar. 21, 2019), <https://www.economist.com/letters/2019/03/21/letters-to-the-editor> [<https://perma.cc/Q8BX-9C2M>].

INTRODUCTION

In 1990, Robert Bork wrote that federalism “is usually thought passé, quaint, or even tyrannical.”⁵ Yet, in the intervening three decades, federalism, under the banner of “States’ rights,” far from being passé or quaint, seems to be enjoying a renaissance, on both the right and the left of the ideological spectrum.⁶ In a widely popular and increasingly influential book,⁷ Jeffrey Sutton—looking to state constitutions as an alternative source of remedies to the United States Constitution for violations of fundamental human rights⁸—gives new meaning to states’ rights, and thus to federalism. Rather than “[a] single laboratory of experimentation for fifty-one jurisdictions,” Sutton argues, allowing the state courts to experiment with remedies under their own constitutions would have the benefit of giving the United States Supreme Court time to learn from those experiments before pronouncing a solution or remedy for the entire nation.⁹ For Sutton,

[t]he more difficult the constitutional question . . . the more indeterminate the answer may be. In these settings, it may be more appropriate to tolerate fifty-one imperfect solutions rather than to impose one imperfect solution on the country as a whole, particularly when imperfection may be something we have to live with in a given area.¹⁰

⁵ ROBERT H. BORK, *THE TEMPTING OF AMERICA: THE POLITICAL SEDUCTION OF THE LAW* 52 (1990).

⁶ See Ilya Somin, *Making Federalism Great Again: How the Trump Administration’s Attack on Sanctuary Cities Unintentionally Strengthened Judicial Protection for State Autonomy*, 97 TEX. L. REV. 1247 (2019).

⁷ JEFFREY S. SUTTON, *51 IMPERFECT SOLUTIONS: STATES AND THE MAKING OF AMERICAN CONSTITUTIONAL LAW* (2018). Justice Brett M. Kavanaugh, for instance, referred to *51 IMPERFECT SOLUTIONS* during his Senate Confirmation Hearing. *Supreme Court Nominee Brett Kavanaugh Confirmation Hearing, Day 2, Part 1*, C-SPAN (Sept. 5, 2018), <https://www.c-span.org/video/?449705-1/supreme-court-nominee-brett-kavanaugh-confirmation-hearing-day-2-part-1&start=1480> [<https://perma.cc/9VGD-4H5T>].

⁸ Recent and topical examples of this can be found in both the United States Supreme Court and in state supreme court decisions. Of the former, see *Arlene’s Flowers, Inc. v. Washington*, 138 S. Ct. 2671 (Mem) (2018) (remanding the case to the Washington Supreme Court for further consideration in light of *Masterpiece Cakeshop, Ltd. v. Colorado Civil Rights Comm’n*, 138 S. Ct. 1719 (2018)); *Klein v. Oregon Bureau of Labor & Indus.*, 139 S. Ct. 2713 (Mem) (2019) (remanding the case to the Oregon Court of Appeals for further consideration in light of *Masterpiece Cakeshop, Ltd. v. Colorado Civil Rights Comm’n*, 138 S. Ct. 1719 (2018)). Of the latter, see the Kansas Supreme Court’s decision in *Hodes & Nauser MDs, P.A. v. Schmidt*, 440 P.3d 461 (Kan. 2019) (upholding the right to an abortion in the Kansas Constitution); *State v. Arlene’s Flowers, Inc.*, 441 P.3d 1203 (Wash. 2019) (rejecting a claim for a violation of the Washington Constitution’s free exercise clause).

⁹ SUTTON, *supra* note 7, at 216.

¹⁰ *Id.* at 19.

While federalism may no longer be quaint or passé, is it still tyrannical? Bork argued that it once was because, quite apart from providing remedies for civil rights violations, it allowed southern states to legislate for racial inequality.¹¹ Much of the taint of that racial tyranny, at least in the formal legal sense, was washed away through federal legislative action in the Civil Rights Act of 1964¹² and the Voting Rights Act of 1965,¹³ part of the larger civil rights movement establishing national rights protected by the federal government and enforced by its judiciary. Whatever it may today mean as a matter of rights protection, though, federalism may retain not only an important but also a *tyrannical* place in the ordering of a modern constitutional federal democracy. Tyranny exists not because it confers unlimited sovereign powers upon a government to act within the sphere of its jurisdictional competence, but through the way in which it divides, separates, and thereby fragments power among more than one unit and level of government. This is certainly true with respect to the allocation of governmental power among not only national but also state and even local or municipal levels of government¹⁴ concerning the environment,¹⁵ and natural resources and their use.¹⁶ In this Article, we

¹¹ BORK, *supra* note 5, at 52.

¹² Civil Rights Act of 1964, 42 U.S.C.A. § 2000e (Westlaw through Pub. L. 116-108).

¹³ Voting Rights Act of 1965, 52 U.S.C.A. § 10101 (Westlaw through Pub. L. 116-108) (formerly cited as 42 U.S.C.A. § 1971). *But see* *Shelby County v. Holder*, 570 U.S. 529 (2013).

¹⁴ See AUSTL. LOCAL GOV'T ASS'N, *FUTURE FOCUSED NGA19 CONFERENCE HANDBOOK* (June 16, 2019), <https://www.nga19.com.au/NGA19-Handbook-Web.pdf> [<https://perma.cc/R3UR-SRAJ>]. The Australian Local Government Association Annual Conference 2019 is entitled “Future Focused” and seeks to address key themes surrounding the difficulties inherent in coordinating federal, state, and local responses to climate change, water use, and recycling. *Id.*

¹⁵ See Lydia B. Hoover, *The Commerce Clause, Federalism and Environmentalism: At Odds After Olin?*, 21 WM. & MARY ENVTL. L. & POL'Y REV. 735 (1997).

¹⁶ Two recent United States Supreme Court decisions provide examples of the difficulties surrounding a bifurcated, federal application of governmental power over integrated natural resources: *Sturgeon v. Frost*, 136 S. Ct. 1061 (2016); *Sturgeon v. Frost*, 139 S. Ct. 1066 (2019) (the Alaska National Interest Lands Conservation Act (ANILCA) set aside 104 million acres of federally owned land in Alaska for preservation purposes. With that land, ANILCA created ten new national parks, monuments, and preserves (areas known as “conservation system units”) (16 U.S.C.A. § 3102(4) (Westlaw through Pub. L. 116-91)); in sketching those units’ boundary lines, Congress made an uncommon choice—to follow natural features rather than enclose only federally owned lands. It thus swept in a vast set of so-called inholdings—more than 18 million acres of state, Native, and private land. Had Congress done nothing more, those inholdings could have become subject to many National Park Service rules, as the Service has broad authority under its Organic Act to administer both lands and waters within parks across the country (54 U.S.C.A. § 100751

argue that this tyranny is especially true, even acutely so, in the case of water.

Moving water to where humans want to use it has long challenged communities; indeed, “[t]he power of water over history is a very old discovery.”¹⁷ Great civilizations that arose in deserts—China, India, Arizona, and the Middle East—depended upon water for their existence and their success, coming to be known as “hydraulic societies.”¹⁸ And even those societies that emerged in places where water was seemingly abundant nonetheless understood the importance of water to their survival and developed a system of rights in order to deal with its allocation.¹⁹ In every case,

[w]ater has been critical to the making of human history. It has shaped institutions, destroyed cities, set limits to expansion, brought feast and famine, carried goods to market, washed away sickness, divided nations, inspired the worship and beseeching of gods, given philosophers a metaphor for existence, and disposed of garbage. To write history without putting any water in it is to leave out a large part of the story. Human experience has not been so dry as that.²⁰

In the modern world, our ongoing attempts to master water, emblematic of “hydraulic societies,” seem increasingly feeble, even futile, often producing bizarre anomalies: water costs are lower in the middle of deserts than they are in places with seemingly abundant fresh water supplies.²¹ Crops that require abundant water—such as cotton

(Westlaw through Pub. L. 116-91)); *Virginia Uranium, Inc. v. Warren*, 139 S. Ct. 1894 (2019) (an attempt by Virginia Uranium, Inc. to mine raw uranium ore from a site near Coles Hill, Virginia; Virginia law flatly prohibits uranium mining in the state. The company filed suit, alleging that, under the Constitution’s Supremacy Clause, the Atomic Energy Act (AEA) preempts state uranium mining laws like Virginia’s and ensconces the Nuclear Regulatory Commission (NRC) as the lone regulator in the field. The District Court, the Fourth Circuit, and the Supreme Court rejected the company’s argument, finding that while the AEA affords the NRC considerable authority over the nuclear fuel life cycle, it offers no hint that Congress sought to strip states of their traditional power to regulate mining on private lands within their borders).

¹⁷ DONALD WORSTER, *RIVERS OF EMPIRE: WATER, ARIDITY, AND THE GROWTH OF THE AMERICAN WEST* 19 (1992) (Pantheon Books 1985).

¹⁸ *Id.* at 37.

¹⁹ *See, e.g.*, CYNTHIA JORDAN BANNON, *GARDENS AND NEIGHBORS: PRIVATE WATER RIGHTS IN ROMAN ITALY* (2009).

²⁰ WORSTER, *supra* note 17, at 19.

²¹ *Water Costs Balloon in Cities Along the Great Lakes*, PBS NEWSHOUR (Mar. 9, 2019, 4:41 PM), <https://www.pbs.org/newshour/show/water-costs-balloon-in-cities-along-the-great-lakes> [<https://perma.cc/XYX3-BTXG>].

and rice—are grown in the middle of deserts.²² Water is transported, in vast networks of concrete canals, great distances from where it flows in natural watercourses to service the needs of cities, which should not be where they are.²³ Water, as it always has, continues to present significant challenges of allocation, management, and use.

Applied to this story of water use, does federalism effect tyranny? The answer to this question begins with the public-private divide. In *Property and Sovereignty*, Morris R. Cohen argued that property is sovereignty, a grant of state power to individuals with respect to a given thing, good, or resource.²⁴ By using the concept of sovereignty to describe property, Cohen draws a distinction between, on the one hand, the public form of that power—*imperium*, residing in the state—to create property and to confer it upon the individual, and, on the other, the private form of that power—*dominium*, allowing individual control over and use of a good or resource.²⁵ Cohen succinctly demonstrates that property involves *two* allocations and *two* exercises of power, of sovereignty: first, that of the state in its political sovereignty to create and confer a form of power known as property on individuals and, second, the power in fact conferred on the individual, a lesser form of sovereignty, but sovereignty all the same.²⁶ Property is the power of the state to create and confer property *and* it is the power so conferred on the individual.²⁷

So, too, the treatment of natural resources in a federal constitutional system involves two allocations of power, one on each side of the public-private divide: the allocation of jurisdictional competence to deal with the resource, on the public side of the divide, and the allocation of the power to use the resource, on the private. The former is a matter of the constitution, the latter one of property. Both involve power to control a natural resource, whatever it might be. David Singh Grewal puts it this way:

At the heart of this distinction between publicly accountable power and decentralized commercial activity [the public-private divide] is a

²² See Kerry Brewster, *Murray-Darling Irrigators File Class Action Seeking \$750m from Basin Authority*, GUARDIAN (May 13, 2019, 2:00 PM), <https://www.theguardian.com/australia-news/2019/may/14/murray-darling-irrigators-file-class-action-seeking-750m-from-basin-authority> [https://perma.cc/58VE-EU53].

²³ See *Crisis on the Colorado*, YALEENVIRONMENT360, <https://e360.yale.edu/series/crisis-on-the-colorado> [https://perma.cc/U92K-CWH3] (last visited Mar. 20, 2020).

²⁴ See Morris R. Cohen, *Property and Sovereignty*, 13 CORNELL L. REV. 8 (1927).

²⁵ *Id.* at 8–9.

²⁶ *Id.*

²⁷ *Id.* at 12–13.

conception of individual property rights as providing relative insulation from direct political control—though, of course, that insulation is itself achieved only through the careful deployment of political power to enforce those rights in the first place.²⁸

In an earlier article, we examined the private side of this divide as applied to water.²⁹ We argued that as water becomes an increasingly scarce resource, a lack of clarity in relation to its use can produce both conflict among and inefficient use by its users.³⁰ This, in turn, exerts pressure on the state to “propertize” the water resource as a means of encouraging markets in water and ensuring the viability and functionality of those markets.³¹ Yet, we conclude, this process of propertization of water ought carefully to be monitored so as to prevent the very outcome sought to be avoided: fragmented control producing inefficient use and what some call “anticommons tragedies.”³²

In this Article, we consider the deployment of public power over the water resource. Federalism, like property, fragments control by dividing and separating power. While fragmentation might work to some extent for relatively discrete aspects of public power, such as those with respect to going to war,³³ entering treaties,³⁴ issuing money,³⁵ and raising and maintaining armed forces,³⁶ when applied to

²⁸ David Singh Grewal, *The Legal Constitution of Capitalism*, in AFTER PIKETTY: THE AGENDA FOR ECONOMICS AND INEQUALITY 483 (Heather Boushey et al. eds., 2017); see also David Singh Grewal, *The Laws of Capitalism*, 128 HARV. L. REV. 626 (2014); KATHARINA PISTOR, *THE CODE OF CAPITAL: HOW THE LAW CREATES WEALTH AND INEQUALITY* (2019).

²⁹ Paul Babie, Paul Leadbeter & Kyriaco Nikias, *Property, Unbundled Water Entitlements, and Anticommons Tragedies: A Cautionary Tale from Australia*, 9 MICH. J. ENVTL. & ADMIN. L. 107 (2020). The concept of anticommons tragedies was developed in the seminal work of Michael A. Heller. Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621 (1998); MICHAEL HELLER, *THE GRIDLOCK ECONOMY: HOW TOO MUCH OWNERSHIP WRECKS MARKETS, STOPS INNOVATION, AND COSTS LIVES* (2008).

³⁰ Babie, Leadbeter & Nikias, *supra* note 29.

³¹ This “propertization” of our modern world is a trend of the last 100–200 years of human history. See C.B. MACPHERSON, *PROPERTY: MAINSTREAM AND CRITICAL POSITIONS* (1978); Charles A. Reich, *The New Property*, 73 YALE L.J. 733 (1964).

³² Babie, Leadbeter & Nikias, *supra* note 29.

³³ U.S. CONST. art. I, § 8, cl. 11; *Australian Constitution*, s 51(vi).

³⁴ U.S. CONST. art. II, § 2, cl. 2; *Australian Constitution*, s 51(xxix).

³⁵ U.S. CONST. art. I, § 8, cl. 5; *Australian Constitution*, s 51(xii).

³⁶ U.S. CONST. art. I, § 8, cl. 11; *id.* art. II, § 2; *Australian Constitution*, s 51(vi). Of course, it is important to note that even seemingly straightforward powers, such as that with respect to marriage, can become an unforeseen minefield of national-state conflict: see Megan Lawson & Paul Babie, *The Law of Marriage Equality in Australia: The Shortest Distance Between Two Points?*, in *INTERFACE THEOLOGY: APPLIED ETHICS 1* (John Capper & Philip Kariatlis eds., 2017).

water, questions immediately arise: which unit of government gets to decide about the allocation of private power—property. Which unit of government can deal with those challenges that transcend formal boundaries, such as the environment? This matters because “[n]ature, the environment, or even single complex ecosystems are seldom easily quantifiable as bounded entities with geographically clear borders.”³⁷ A river certainly cannot be broken up that way; in any form, scarce water³⁸ rejects the arbitrary boundaries established by humans between levels, units, or branches of government. The “‘problem of the rivers’ [is] an ancient and familiar one, since river-waters [are] essential to man’s life and activities, [yet] nature care[s] nothing for his territorial boundaries.”³⁹ Thus,

[w]ithin the complex spectrum of establishing where a legal subject ends and another begins . . . rivers are somewhat more easily identifiable, their very being premised on historicized boundaries that measure their watery ambit from riverbed to riverbank. And yet, rivers still elude a final, clearly defined, and uncontroversial description. As a result, rivers inhabit a liminal space, one that is at the same time somewhat geographically bounded and yet metaphorically transcendent, physically shifting, and culturally porous.⁴⁰

A river is a unitary, integrated, single entity, which in turn is a part of the unitary, integrated, single entity that is nature, the environment itself. A river defies the borders and boundaries and the management “solutions” imposed upon it by something as arbitrary as federalism.

Imagine, for instance, a hypothetical river flowing through all lower forty-eight coterminous or contiguous states. Using Sutton’s approach to federalism, that river is potentially subject to the law of forty-nine different jurisdictions—one for each state and the U.S. federal government—with forty-nine “imperfect solutions” to its management. Put those solutions together and one is left not with a useful laboratory of approaches, but chaos. This is no mere hypothetical scenario: the Mississippi River Basin takes in thirty-two of the contiguous states; the

³⁷ Cristy Clark et al., *Can You Hear the Rivers Sing? Legal Personhood, Ontology, and the Nitty-Gritty of Governance*, 45 *ECOLOGY L.Q.* 787, 791 (2018) (arguing for the recognition of rivers as “legal persons”).

³⁸ Sydneysiders, for instance, are now under enforced water restrictions. See Samantha Dick, *Sydney Water Restrictions Enforced Early Amid NSW Drought*, *NEW DAILY* (May 29, 2019, 10:29 PM), https://thenewdaily.com.au/news/national/2019/05/29/water-restrictions-in-sydney/?utm_source=Adestra&utm_medium=email&utm_campaign=MorningNews-20190530 [https://perma.cc/KU86-JGZE].

³⁹ J.A. LA NAUZE, *THE MAKING OF THE AUSTRALIAN CONSTITUTION* 154–55 (1972).

⁴⁰ Clark et al., *supra* note 37.

Columbia River, ten; and the Colorado River, seven. And most constitutional federal democracies reveal the same potential for the fragmentation of power with respect to water: in Australia, the Murray-Darling Basin (the largest river system on the continent) takes in fully four of the six mainland states and one of its territories.⁴¹ In the case of the interstate watercourses found there, while actors continue to seek a political solution to a problem bequeathed to us by constitutional federalism,⁴² coordinated action is virtually impossible and almost certain to prove elusive due to the “complex interplay of diverse interests.”⁴³

And so federalism represents tyranny to the river and its water; the tyranny, first, of the fragmentation of power with respect to an integrated whole—the interstate watercourse—and, second, the tyranny of inaction and ineffectuality in its attempts to provide coordinated management of a water resource by its very nature incapable of fragmentation. To adapt the Heraclitean epigraph to this Article, federalism means that government tries not only to enter the river twice but many times. In this Article, which contains five parts, we consider federalism’s tyranny over water through a comparative assessment of two constitutional federal systems and through an examination of the distribution of powers in those systems: the United States and California, and Australia and South Australia. While the Article deals with surface interstate watercourses in those jurisdictions

⁴¹ Australia comprises five contiguous mainland States (New South Wales, Queensland, South Australia, Victoria, and Western Australia), one offshore State (Tasmania), three contiguous mainland, or internal Territories (Australian Capital Territory, Northern Territory, and Jervis Bay Territory), and seven offshore or external Territories (Ashmore and Cartier Islands, Australian Antarctic Territory, Christmas Island, Cocos (Keeling) Islands, Coral Sea Islands, Heard Island and McDonald Islands, Norfolk Island). *Cities, States and Territories*, AUSTL., <https://www.australia.com/en-us/facts-and-planning/about-australia/cities-states-and-territories.html> [<https://perma.cc/D77U-GAEH>] (last visited Mar. 20, 2020).

⁴² See, e.g., Adam Webster, *A Referendum Won’t Save the Murray-Darling Basin*, CONVERSATION (May 12, 2019, 4:15 PM), <https://www.theconversation.com/a-referendum-wont-save-the-murray-darling-basin-116750> [<https://perma.cc/P33Y-8B26>]; Michael Stewardson, *How Did It Come to This?*, PURSUIT (Jan. 22, 2019), <https://pursuit.unimelb.edu.au/articles/how-did-it-come-to-this-1906> [<https://perma.cc/W88A-BKDC>]; Univ. N.S.W., *What an Effective Murray-Darling Water Policy Should Look Like*, AUSTL.’S SCI. CHANNEL, <https://australiascience.tv/what-an-effective-murray-darling-water-policy-should-look-like> [<https://perma.cc/D99U-R9AM>] (last updated Mar. 28, 2019); Stan. Univ. Rural W. Initiative, *What Seven States Can Agree to Do: Deal-Making on the Colorado River*, WATER EDUC. FOUND. (Jan. 6, 2012), <https://www.watereducation.org/aquaformia-news/what-seven-states-can-agree-to-deal-making-colorado-river> [<https://perma.cc/WA49-LZL5>].

⁴³ Lon L. Fuller, *Irrigation and Tyranny*, 17 STAN. L. REV. 1021, 1042 (1965).

generally, our focus is the main interstate rivers which provide water supply: in the case of California, the Colorado River and its basin, and in the case of South Australia, the River Murray and the Murray-Darling Basin.⁴⁴

Part I of the Article examines the constitutional settlements with respect to water resources found in the United States and Australia. We look first at the concept of federalism itself, before turning our focus to the division of power as it concerns water resources between the national government—the federal government in the United States, and the Commonwealth government in Australia—and the state governments in each jurisdiction. While our analysis applies equally to the relationship of any of the American states to the federal government or of the Australian states to the Commonwealth government, we consider here that relationship as it applies to California in the case of the former and South Australia in the case of the latter.

Part II recounts attempts in both jurisdictions to use what is known as “cooperative,” “flexible,” or “marble-cake” federalism to overcome the problems created by the federal division of powers over water resources. In the case of the United States-California relationship, we examine “The Law of the River,” which governs water in the Colorado River; in the case of Australia-South Australia, we review the various attempts to establish a framework for the allocation and use of Murray-Darling water. In both cases, we conclude that these attempts at cooperative or flexible solutions have failed, for the very reasons that they are founded in the principle of federalism.

In Parts III and IV, we explore the nature of existing disputes and emerging challenges that arise as a consequence of the federal division of power over water resources. These are: overallocation and overuse of the resource relative to land use planning and instream or ecological flows of water; First Nations or Indigenous cultural flows of water; international obligations with respect to the water resource; and,

⁴⁴ While many of the federalism issues that we address here apply also to groundwater, that area of law does differ with respect to surface water, largely surface water of rivers. Of course, while the lack of coordination between those two bodies of law with respect to one natural resource—water—is itself a problem of federalism, we restrict our discussion here to the surface water, and of that, mainly to the rivers that water California and South Australia. Yet, our analysis could be applied to groundwater as well. We leave a full analysis of groundwater law, though, to future research. For the law of groundwater in the two jurisdictions considered in this Article, *see*, for California, 2 SCOTT S. SLATER, CALIFORNIA WATER LAW AND POLICY (2019) [hereinafter SLATER 2] and, for South Australia, Kate Stoeckel, Romany Webb & Julia Green, *Rights to Access and Use of Water*, in AUSTRALIAN WATER LAW 83–220, 136–52 (Kate Stoeckel et al. eds., 2012).

perhaps the most significant and potentially the most intractable challenge from the perspective of federalism, climate change.

In the Conclusion, we reflect upon the enormity of the challenges: climate change, the allocation of water among more than one nation, and the inability of federalism to cope as those challenges increase in severity. Still, federalism seems here to stay, notwithstanding its inability to provide workable solutions for water management. This may prompt some to suggest that this Article is nothing but a thought experiment and that our time might have been more usefully spent on suggesting ways in which these challenges could be addressed within the existing federal framework. Our response: it remains important that we understand the weaknesses of federalism to deal with these challenges. It is only in understanding the frailties that we might better understand what federalism must do in order to adapt and respond to the challenges it faces. We live in an empirical world and, for that reason, we argue that we must not only understand the challenges found there but also respond to them. What that may hold for the future of federalism we cannot say. But what we can say is that federalism must be rethought, and urgently so.

I

CONSTITUTIONAL SETTLEMENTS: ALLOCATING POWER OVER WATER

In order to understand the problems federalism creates in the allocation of governmental control over a natural resource like water, it is first necessary to understand what federalism is. The first section of this part briefly examines the nature of federalism. Having set that background, we turn to the way in which the United States and Australia use federalism to divide control over water between the federal and state governments—focusing on California and South Australia.

A. Federalism

Federalism, first devised in the late 18th century in the time between the U.S. Declaration of Independence in 1776 and the Constitutional Convention of 1787 (considered “*the* seminal era of constitution writing”⁴⁵), establishes “a system of associated governments with a

⁴⁵ SUTTON, *supra* note 7, at 11; see Gordon S. Wood, *State Constitution-Making in the American Revolution*, 24 RUTGERS L.J. 911 (1993); GORDON S. WOOD, *THE CREATION OF THE AMERICAN REPUBLIC 1776–1787* (1969). Of course, the bedrock upon which all

vertical division of governments into national and regional components having different responsibilities.”⁴⁶ This process is known as the “division of powers” between the national and regional levels of government.⁴⁷ In the United States, the government responsible for the national interest is known as the federal government; in Australia, this level of government is known as either the federal or the Commonwealth government. In both countries, the states and their governments bear responsibility at the regional level.

A further separation of power is then affected within each level of government, separating the executive, legislative, and judicial spheres—this is well known as the “separation of powers.”⁴⁸ As Sutton explains:

In “split[ting] the atom of sovereignty,” the Framers created American federalism, a unique way of dividing governmental power and a unique way of aggregating it. That innovation and the many compromises that came with it make the U.S. Constitution a rightly celebrated framework of government. The horizontal separations of power among the three branches of the national government, together with the vertical separation of powers between the national government and the States, provide the soundest protection of liberty any people has known.⁴⁹

When a constitution separates powers, what is it *separating*? It is hard to say, but George Paton suggested that

[a]lthough in political theory much has been made of the vital importance of the separation of powers, it is extraordinarily difficult to define precisely each particular power. In an ideal state we might imagine a legislature which had supreme and exclusive power to lay down general rules for the future without reference to particular cases; courts whose sole function was to make binding orders to settle disputes between individuals which were brought before them by applying these rules to the facts which were found to exist; an administrative body which carried on the business of government by issuing particular orders or making decisions of policy within the narrow confines of rules of law that it could not change. The

theorizing about federalism builds is the *FEDERALIST PAPERS* (1787–1788). See Madison, *supra* note 2; *Anti-Federalist Papers*, CONST. SOC’Y, <https://www.constitution.org/afp.htm> [<https://perma.cc/E7Y7-FMZQ>] (last visited Mar. 20, 2020).

⁴⁶ *Federal*, BLACK’S LAW DICTIONARY (10th ed. 2014).

⁴⁷ *Division of Powers*, BLACK’S LAW DICTIONARY (10th ed. 2014).

⁴⁸ The earliest formulation of the separation of powers is traceable to JOHN LOCKE, *TWO TREATISES OF GOVERNMENT* (1689) and later to CHARLES-LOUIS DE SECONDAT, *BARON DE LA BRÈDE ET DE MONTESQUIEU, SPIRIT OF THE LAWS* (1748); see *Myers v. United States*, 272 U.S. 52, 85 (1926) (Brandeis, J., dissenting).

⁴⁹ SUTTON, *supra* note 7, at 11 (footnote omitted) (quoting *United States Term Limits, Inc. v. Thornton*, 514 U.S. 779, 838 (1995) (Kennedy, J., concurring)).

legislature makes, the executive executes, and the judiciary construes the law.⁵⁰

Notwithstanding the lack of clarity around the separation of powers, we can say at least this much: both the division and the separation of powers are integral parts of a federalism, a federal structure of government.⁵¹ Laurence Tribe concludes:

Just as the Colossus once strode the wine-dark waters of the harbor of Rhodes, so the separation of powers (along with its vertical counterpart, sometimes called the “division of powers” that constitutes federalism) commands and pervades American constitutional law.⁵²

The conclusion is the same for both the United States and Australia: federalism divides and separates power, and thereby fragments⁵³ responsibility between the federal/Commonwealth government and the state governments, each of which establishes its own apparatus of executive, legislative, and judicial power.

What responsibility, though, does each level—national and local—enjoy within a federal system, and what power does each unit of government, executive, legislative, and judicial, enjoy within that system? While it depends upon the relevant constitution, two broad approaches seem common. The Canadian Constitution, for instance, confers upon the national government and the local governments a list of coextensive enumerated spheres of legislative responsibility over which that level of government enjoys exclusive power; a residue clause reserves power over any matters not otherwise enumerated in either the national or the local list to the former.⁵⁴ In contrast to the Canadian model, which we might call “equality of distribution,” the Australian Constitution enumerates a list of powers reserved exclusively to the Commonwealth government,⁵⁵ with any matters not otherwise found in that list reserved to the states.⁵⁶ And in the United States, powers not delegated to the federal government are reserved to

⁵⁰ GEORGE WHITECROSS PATON, *A TEXTBOOK OF JURISPRUDENCE* 293 (David P. Derham ed., 3rd ed. 1964).

⁵¹ For a full background to the federal structure established by the United States Constitution, see LAURENCE H. TRIBE, *AMERICAN CONSTITUTIONAL LAW* 15–19 (Found. Press 3rd ed. 2000).

⁵² *Id.* at 124.

⁵³ *Id.*

⁵⁴ Constitution Act, 1867, 30 & 31 Vict., c 3 (U.K.), reprinted in R.S.C. 1985, app II, no 5 (Can.), ss. 91–92.

⁵⁵ GEOFFREY SAWER, *AUSTRALIAN FEDERALISM IN THE COURTS* 15–16 (1967).

⁵⁶ *Australian Constitution*, s 51; see SAWER, *supra* note 55, at 16–17.

the states or to the people.⁵⁷ We might call the Australian and American variants “asymmetrical distribution,” with federalism leaving scope for the “states as sole regulators of areas left beyond federal power.”⁵⁸

Why should federalism matter? Whatever model a nation selects—equality or asymmetry—why does understanding what federalism means make a difference? Why does it matter in working out what governments may do with respect to the control of the water resource? Bork’s tyranny and Sutton’s solutions go to the heart of the difficulty: division results in internecine struggles over where the power resides over a given head of competence, often times leaving no one with the effective control over a given matter, such as natural resources.⁵⁹ Sutton sets out where federalism has gone wrong in relation to the protection of human rights, but his analysis is equally applicable to natural resources; indeed, the faults of federalism may be even more acute in the case of water:

What we have today is not an inevitable feature of the Framers’ vision [of federalism]. It is in reality quite remote from anything the Framers could have imagined. The original constitutional plan created largely exclusive federal and state spheres of power as opposed to largely overlapping spheres of power. Which makes sense: Why would a libertarian group of Framers, skeptical of governmental power and intent on dividing it in all manner of ways, have *doubled* the governmental bodies that could regulate the lives of Americans? And tripled and quadrupled them if one accounts for cities and counties? A system of largely separate dual sovereignty (federal *or* state power in most areas) has become a system of largely overlapping dual sovereignty (federal *and* state power in most areas). Good or bad, textually justified or not, this feature of American government is not going away. American constitutional law today thus permits at least two sets of regulations in every corner of the country and what comes with it: the potential for dual challenges to the validity of most state or local laws.⁶⁰

This is the very problem revealed by an examination of the allocation of private power—property—over water: inefficient use and

⁵⁷ U.S. CONST. amend. X.

⁵⁸ BORK, *supra* note 5.

⁵⁹ BORK, *supra* note 5, at 139; SUTTON, *supra* note 7, at 19.

⁶⁰ SUTTON, *supra* note 7, at 13–14 (footnote omitted) (emphasis in the original); *see* TRIBE, *supra* note 51, at 124 (explaining that “along both dimensions, that of federalism [division of powers] as well as that of separation of powers, it is *institutional interdependence* rather than *functional independence* that best summarizes the American idea of protecting liberty by fragmenting power.” In other words, in order for a federal system to act with respect to any matter often requires some form of cooperation, often both among branches of government and between different levels of government.).

anticommons tragedies. And while the consequences of this state of affairs for fundamental rights might be dire, it is much more troubling in the case of water, for it renders impossible the potential for either federal or state governments effectively and comprehensively to manage the whole of the water resource. Instead, both levels of government can deal only with some aspects of the water resource, leading to significant problems, which we consider in Part III.

Before turning to those problems, though, we first consider the way in which power over water is divided between the federal and state governments in the U.S. and Australian Constitutions and, second, how those constitutional settlements necessitate “cooperative,” “flexible,” or “marble cake” federalism between federal and state governments.

B. Water

1. United States

The U.S. Constitution nowhere expressly mentions water or governmental control over its allocation. As such, the powers enjoyed by the federal and state governments are either found within an express delegation of power or are reasonably implied from the powers of the federal government, which may touch upon the allocation and use of water.⁶¹ While the federal government enjoys paramount power with respect to any powers conferred upon it,⁶² powers either implied or not expressly granted to the federal government are reserved by the Tenth Amendment⁶³ to the states or to the people,⁶⁴ making water largely a matter of state competence.⁶⁵

⁶¹ For an overview of the powers of the federal and state governments concerning water, see IMPERIAL IRRIGATION DIST., *LAW OF THE RIVER: RESOURCE GUIDE* 4–14 (2018).

⁶² *M’Culloch v. Maryland*, 17 U.S. 316 (1819); see 3 PRESIDENT’S WATER RESOURCES POLICY COMMISSION REPORT: WATER RESOURCES LAW 70–71 (1950) [hereinafter PRESIDENT’S REPORT].

⁶³ U.S. CONST. amend. X.

⁶⁴ PRESIDENT’S REPORT, *supra* note 62, at 5–6, 70–72; see also Ernest A. Engelbert, *Federalism and Water Resources Development*, 22 L. & CONTEMP. PROBS. 325, 326–28 (1957).

⁶⁵ See 1 SCOTT S. SLATER, *CALIFORNIA WATER LAW AND POLICY* § 1.02[2]–[7], §§ 1.10–1.11 (2019) [hereinafter SLATER 1]; SLATER 2, *supra* note 44, § 12.02.

a. Federal Powers

The place of water in U.S. constitutional law is the subject of great complexity, allowing for extensive administrative institutional bodies with power over the allocation of water.⁶⁶

However, it is possible to summarize seven express provisions of the U.S. Constitution conferring upon the federal government power which may touch upon the allocation and use of the water resource:⁶⁷ commerce,⁶⁸ property,⁶⁹ war,⁷⁰ treaty-making,⁷¹ general welfare,⁷² equitable apportionment,⁷³ and interstate compacts.⁷⁴ And because of the separation of powers, it is possible to group these according to each branch of government capable of exercising them, for “the powers confided by the Constitution to one branch cannot be exercised by another. Nor is Congress ‘permitted to abdicate, or to transfer to others, the essential legislative functions with which it is thus vested.’”⁷⁵ Thus, Congress is vested with exclusive power with respect to commerce, property, conducting war, the general welfare, and entering interstate compacts; the President with declaring war and treaty-making; and the

⁶⁶ See INST. WATER RES., ASPECTS OF GOVERNING WATER ALLOCATION IN THE U.S. 13–35 (2014); Ray Huffaker et al., *The Uneasy Hierarchy of Federal and State Water Laws and Policies*, 118 J. CONTEMP. WATER RES. & EDUC. 3 (2001).

⁶⁷ For an exhaustive review of the federal powers considered in this part, see *TRIBE*, *supra* note 51, at chs. 3–5.

⁶⁸ U.S. CONST. art. I, § 8, cl. 3. For a detailed analysis of the law surrounding this provision, see *PRESIDENT’S REPORT*, *supra* note 62, at 8–29. See also Sho Sato, *Water Resources—Comments upon the Federal-State Relationship*, 48 CALIF. L. REV. 43 (1960).

⁶⁹ U.S. CONST. art. IV, § 3, cl. 2. For a detailed analysis of the law surrounding this provision, see *PRESIDENT’S REPORT*, *supra* note 62, at 29–54. See also Sato, *supra* note 68.

⁷⁰ U.S. CONST. art. I, § 8, cl. 11. U.S. CONST. art. II, § 2. For a detailed analysis of the law surrounding this provision, see *PRESIDENT’S REPORT*, *supra* note 62, at 54–55.

⁷¹ U.S. CONST. art. II, § 2, cl. 2. For a detailed analysis of the law surrounding this provision, see *PRESIDENT’S REPORT*, *supra* note 62, at 56–57.

⁷² U.S. CONST. art. I, § 8. For a detailed analysis of the law surrounding this provision, see *PRESIDENT’S REPORT*, *supra* note 62, at 57–58.

⁷³ This power derives from the Supreme Court’s original jurisdiction over all cases in which a state is a party: U.S. CONST. art. III, § 2, cl. 2. For a detailed analysis of the law surrounding this provision, see *PRESIDENT’S REPORT*, *supra* note 62, at 58–64. See also Lauren D. Bernadett, *Equitable Apportionment in the Supreme Court: An Overview of the Doctrine and the Factors Considered by the Supreme Court in Light of Florida v. Georgia*, 29 J. ENVTL. L. & LITIG. 511 (2014).

⁷⁴ U.S. CONST. art. I, § 10. For a detailed analysis of the law surrounding this provision, see *PRESIDENT’S REPORT*, *supra* note 62, at 64–70.

⁷⁵ *PRESIDENT’S REPORT*, *supra* note 62, at 64–70 (citing *Ex parte Grossman*, 267 U.S. 87, 119 (1925)); *Kilbourne v. Thompson*, 103 U.S. 168, 191 (1880); *Panama Refining Co. v. Ryan*, 293 U.S. 388, 421 (1935); *Knickerbocker Ice Co. v. Stewart*, 253 U.S. 149, 164 (1920).

Supreme Court with original jurisdiction to determine equitable apportionments of water and to interpret interstate water compacts between states. Still, notwithstanding the exclusive jurisdiction of the respective branches, “Congress is expressly empowered to make all laws ‘necessary and proper’ for carrying into execution its expressly delegated powers and ‘all other Powers’ vested by the Constitution in the Federal Government.”⁷⁶

The powers with respect to commerce and property provide Congress the most comprehensive power with respect to water. The Commerce Clause confers power to act in furtherance of commerce, paramount to any riparian rights under state law concerning (1) control of navigable waters, and, if navigation or commerce is affected, the non-navigable waterways at the headwaters or non-navigable tributaries of such waters; (2) protection against floods; and (3) the development of a watershed.⁷⁷ The Property Clause confers upon Congress the unlimited authority to control the use of federal public lands, which, while allowing states to create rights to use water in streams on such land, does not allow for the rights of the United States to be thereby destroyed.⁷⁸ Congress has used this power to recognize the prior appropriation doctrine for waters on public lands in the western United States, and to establish the federal property right in electrical energy generated by water falling through a federal dam.⁷⁹

The presidential powers with respect to treaty-making and declaring war (and, indeed, the power of Congress to wage it) have received little judicial attention, although the former power has “existing and potential significance, particularly as to international streams. Also, by treaties with western tribes of Indians, the United States has reserved rights to use of waters and exempted them from appropriation under state laws.”⁸⁰

The Supreme Court’s original jurisdiction with respect to equitable apportionment of interstate waters between states, when combined with the interstate compacts power of Congress, establishes an important power used extensively throughout the history of the republic. The former “is a doctrine that was created by the Supreme Court to ensure that each state can enforce its right to an equal share of common

⁷⁶ PRESIDENT’S REPORT, *supra* note 62, at 8 (citing U.S. CONST., art. I, § 8, cl. 18).

⁷⁷ PRESIDENT’S REPORT, *supra* note 62, at 9–11 (citing *M’Culloch v. Maryland*, 17 U.S. 316 (1819)).

⁷⁸ For a recent example, *see Sturgeon v. Frost*, 139 S. Ct. 1066 (2019).

⁷⁹ PRESIDENT’S REPORT, *supra* note 62, at 71–72.

⁸⁰ PRESIDENT’S REPORT, *supra* note 62, at 72.

waters.”⁸¹ When operating in conjunction with the congressional power to enter interstate compacts, this establishes the principle that

[e]very state has a right to an equal share of interstate waters. When states dispute the share of water to which they are entitled, the dispute can be resolved by interstate apportionment compact, Congressional apportionment, or an equitable apportionment suit with the Supreme Court. Equitable apportionment cases arise under the Court’s original and exclusive jurisdiction.

Original jurisdiction allows states to file a lawsuit directly with the Supreme Court rather than starting at a district court, appealing to a circuit court, and appealing again to the Supreme Court. Further, when the lawsuit is between multiple states, as in an equitable apportionment case, the Supreme Court has exclusive jurisdiction. A state that is being sued cannot claim sovereign immunity to avoid an original jurisdiction action because Article III . . . acts as a waiver of any state sovereign immunity.

In an equitable apportionment lawsuit, state citizens are the beneficiaries of any relief granted by the Supreme Court. But the Eleventh Amendment prohibits citizens from suing another state over interstate water rights. Thus, to avoid violating the Eleventh Amendment in equitable apportionment cases, states act in a *parens patriae* capacity even though state citizens are the ultimate beneficiaries.⁸²

This dual interstate compacts-equitable apportionment power—as demonstrated in the *Arizona v. California* litigation, which began in 1931 and remains ongoing⁸³—provides for the interaction of federal judicial and legislative powers, cultivating a fertile source of

⁸¹ Bernadett, *supra* note 73, at 514 (citing A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 10:2 (2014 ed., 1988)). The doctrine, first established in *Kansas v. Colorado*, 206 U.S. 46 (1907), was further elaborated on in *Wyoming v. Colorado*, 259 U.S. 419 (1922), and is best known for *Arizona v. California*, 283 U.S. 423 (1931); 292 U.S. 341 (1934); 298 U.S. 558 (1936); 373 U.S. 546 (1963); 376 U.S. 340 (1964); 383 U.S. 268 (1966); 439 U.S. 419 (1979); 460 U.S. 605 (1983); 466 U.S. 144 (1984); 531 U.S. 1 (2000). *Arizona v. California*, 283 U.S. 423 (1931), specified the amount of water to which Arizona was entitled under the Colorado River Compact of 1922; this demonstrates the interaction of the Supreme Court’s equitable apportionment and the Congressional interstate compact powers. A recent application of the doctrine is found in *Florida v. Georgia*, 138 S. Ct. 2502 (2018). See also PRESIDENT’S REPORT, *supra* note 62, at 72.

⁸² Bernadett, *supra* note 73, at 513–14 (citing A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES §§ 10:1–10:3, 10:07, 10:10 (2014 ed. 1988)); Douglas L. Grant, *Interstate Water Allocation Compacts: When Virtue of Performance Becomes the Vice of Inflexibility*, 74 U. Colo. L. Rev. 105 (2003); 28 U.S.C.A. § 1251(a) (Westlaw through Pub. L. 116-91); *Principality of Monaco v. Mississippi*, 292 U.S. 313 (1934). See also PRESIDENT’S REPORT, *supra* note 62, at 72.

⁸³ See *infra* Section II.A.2.

potentially cooperative or flexible federalism. We will return to this issue in Parts II and III.⁸⁴

b. State Powers

When the federal government legislates within its sphere of competence, the Supremacy Clause ensures that such law is the “supreme law of the land.”⁸⁵ This power, operating in concert with the preemption doctrine developed by the Supreme Court of the United States, results in relevant federal legislation preempting state law, even in the case of state and federal laws that conflict with one another.⁸⁶ As a general matter, in the absence of any federal law, however, a state law will operate, but only until such time as the federal government might legislate. Alternatively, where conflict might otherwise occur, the two spheres of government can cooperate with respect to a given matter.⁸⁷

The question then arises as to which powers the states exclusively enjoy in relation to water. An initial distinction must be drawn between interstate waters (flowing through more than one state) and those entirely within one state. In the case of the former, “on the whole, the federal government’s powers have been used to guide and control the development of major streams in the country.”⁸⁸ In the case of the latter, as the owner of all resources “occurring wholly within [its] borders,”⁸⁹ and because the Tenth Amendment ensures that undelegated powers are reserved to the states, a state has “greater responsibility for the distribution and use of waters locally.”⁹⁰

The powers reserved to the states with respect to water fall into three broad categories. First, the “police power” allows for the regulation of “various water activities for the general welfare, such as the production of water for domestic purposes or the control of sewage disposal,”⁹¹

⁸⁴ For an overview and analysis of the jurisprudence dealing with this dual power, see Bernadett, *supra* note 73, at 513–14. And for the prevalence of cooperative federalism in water, see Engelbert, *supra* note 64, at 345.

⁸⁵ U.S. CONST. art. VI, cl. 2.

⁸⁶ *Maryland v. Louisiana*, 451 U.S. 725 (1981); *Altria Group v. Good*, 555 U.S. 70 (2008); *Wyeth v. Levine*, 555 U.S. 555 (2009). For an exhaustive review of the powers of the states relative to the federal government, see *TRIBE*, *supra* note 51, at ch. 6.

⁸⁷ Based upon the Supremacy Clause of U.S. CONST. art. VI, cl. 2, the Necessary and Proper Clause of U.S. CONST. art. I, § 8, and the U.S. CONST. amend. X. See *Printz v. United States*, 521 U.S. 898 (1997); *New York v. United States*, 505 U.S. 144 (1992).

⁸⁸ Engelbert, *supra* note 64, at 327.

⁸⁹ *TRIBE*, *supra* note 51, at 1085.

⁹⁰ Engelbert, *supra* note 64, at 327.

⁹¹ *Id.*

and “for the protection of health, safety, and welfare, including [public] trust resources, such as fish and wildlife.”⁹² Second, states enjoy “the power to determine the allocation and distribution of both surface and underground waters within the state. The states are permitted to adopt whatever system of water law they choose, including the law for those lands which have passed from the federal government to the states, provided it does not conflict with the federal government’s powers over navigation.”⁹³ This allows for the entirety of state water resources law, which governs the allocation and use of water not otherwise subject to federal jurisdiction.⁹⁴ And third, states may exercise “powers to engage in interstate action with respect to water use and development.”⁹⁵ Of greatest significance here are those instances of cooperative or flexible federalism resulting in interstate compacts, as we will see in Part III in relation to the Colorado River Compact of 1922.⁹⁶

2. *Australia*

Unlike its U.S. counterpart, the Australian Constitution expressly mentions water—once expressly and once impliedly—in a way that creates more confusion than clarity about the division of water and power.⁹⁷ This, in itself, is unsurprising. If the “rivers question”⁹⁸ or the “problem of the rivers”⁹⁹ “had not been settled there could have been no Constitution and no federation.”¹⁰⁰ The delegates to the Australian constitutional conventions of the 1890s devoted significant attention and time to debating the rivers question, by which

‘rivers’ meant the Murray-Darling system. In effect the argument about the use of the waters of this one great inland system in a vast dry continent concerned New South Wales, Victoria and South

⁹² SLATER 1, *supra* note 65, § 13.03[3]. We consider the public trust doctrine below in Section IV.A.

⁹³ Engelbert, *supra* note 64, at 327. Thus, “[t]o remove any question concerning water rights in states created out of federal territory, the *Desert Land Act of 1877*, 19 Stat. 377, as amended, 43 U.S.C. §321 (1952), in effect provided that all non-navigable waters on these lands should be reserved for public use under state law.” *Id.* at n.7.

⁹⁴ See, e.g., SLATER 1, *supra* note 65, § 1.02[1].

⁹⁵ Engelbert, *supra* note 64, at 327.

⁹⁶ See *Hinderlider v. La Plata River & Cherry Creek Ditch Co.*, 304 U.S. 92 (1938).

⁹⁷ Paul Kildea & George Williams, *The Constitution and the Management of Water in Australia’s Rivers*, 32 SYDNEY L. REV. 595, 601–03 (2010).

⁹⁸ LA NAUZE, *supra* note 39, at 153–55.

⁹⁹ *Id.* at 210.

¹⁰⁰ *Id.* at 208. See also Sandford D. Clark, *The River Murray Question: Part I—Colonial Days*, 8 MELBOURNE U. L. REV. 11 (1971); Adam Webster, *A Colonial History of the River Murray Dispute*, 38 ADEL. L. REV. 13 (2017).

Australia only, for though some of the sources of the Darling lay within Queensland the points at issue would have worried her little even if she had been represented. The use of the river-waters, whether by conservation schemes to provide for consumption by man and animals, by irrigation schemes for agriculture, or as highways for navigation, affected all three States, though their anxieties were concentrated in different degrees on these various matters.¹⁰¹

In short, for the three concerned states, water was power. The difficulty in settling the division of governmental control over water, and thus over power, centered on the conflict over the Murray-Darling Basin and its tributaries between the southeastern colonies. Victoria and New South Wales sought economic development through irrigating and thus cultivating otherwise arid or low rainfall land, while South Australia sought to ensure sufficient flows in the Murray-Darling system to protect its burgeoning river trade.¹⁰² This struggle between the three resulted in the inclusion of two conflicting provisions conferring power upon the Commonwealth government.¹⁰³

a. Commonwealth Powers

In addressing the rivers question, the delegates of the constitutional conventions ultimately settled on two provisions, sections 98 and 100:

Section 98:

The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

Section 100:

The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.¹⁰⁴

Read together, what do these two provisions mean? On their face, they appear to create conflicting power for the Commonwealth government. On the one hand, section 98 confers upon the Commonwealth the power to make laws with respect to trade and

¹⁰¹ LA NAUZE, *supra* note 39, at 154.

¹⁰² Kildea & Williams, *supra* note 97, at 601.

¹⁰³ Sandford D. Clark, *The River Murray Question: Part II – Federation, Agreement and Future Alternatives*, 8 MELBOURNE U. L. REV. 215 (1971).

¹⁰⁴ For an overview of these powers, and the federal and state powers concerning water resources considered in this part, see JOHN PYKE, *GOVERNMENT POWERS UNDER A FEDERAL CONSTITUTION: CONSTITUTIONAL LAW IN AUSTRALIA* (2017).

commerce, including navigation and shipping; while on the other hand, section 100 seems to limit that right with respect to water itself.

Section 98 operates as a declaration, clarifying the operation of section 51(i) of the constitution, which confers upon the Commonwealth government the “power to make laws for the peace, order, and good government of the Commonwealth with respect to . . . trade and commerce with other countries, and among the states.”¹⁰⁵ In other words, “[i]t is in effect a definition clause, declaring that trade and commerce includes traffic by water as well as by land.”¹⁰⁶ It is, therefore, similar in its effect to the Commerce Clause of the U.S. Constitution.¹⁰⁷

Section 98 satisfied South Australia that its interests in river trade along the Murray-Darling system would be protected through the power of the Commonwealth. But what about Victoria and New South Wales? Both these states “viewed [section] 98 as a potential threat to their growing interest in irrigation. They were concerned that Commonwealth action to ensure river navigability could potentially supersede their interests in using water for irrigation purposes.”¹⁰⁸ This concern prompted the inclusion of section 100, which vested the Commonwealth with power to ensure the reasonable use of river waters for conservation or irrigation in upstream states.¹⁰⁹ Thus, in the event of a conflict between navigation and reasonable use within a state, “the power of the Federal Parliament to regulate navigation would have prevailed absolutely against any claims by the States to the use of the water, and the object of this section is to limit the paramountcy of the navigation power so far as it may interfere with ‘the reasonable use’ of the waters for State purposes.”¹¹⁰ This is unlike the Commerce and Property Clauses of the U.S. Constitution which, particularly in the arid western states, such as California, can be used to prevent the impounding of water within a state that affects the navigability, even of a non-navigable upper tributary, of a navigable watercourse. In

¹⁰⁵ *Australian Constitution* s 51(i). See also Kildea & Williams, *supra* note 97, at 601; JOHN QUICK & ROBERT RANDOLPH GARRAN, *THE ANNOTATED CONSTITUTION OF THE AUSTRALIAN COMMONWEALTH* § 409 (1901).

¹⁰⁶ QUICK & GARRAN, *supra* note 105.

¹⁰⁷ *Id.*

¹⁰⁸ Kildea & Williams, *supra* note 97, at 601.

¹⁰⁹ *Morgan v Commonwealth* (1947) 74 CLR 421, 455 (Austl.); *Arnold v Minister Administering Water Management Act 2000* (2008) NSWCA 338 (Austl.). See also Kildea & Williams, *supra* note 97, at 602.

¹¹⁰ QUICK & GARRAN, *supra* note 105, § 416.

section 100, the Commonwealth may act to restrain such use only where it is unreasonable.¹¹¹

Unlike the U.S. Constitution, however, the Commonwealth Executive has no independent powers, express or implied, with respect to water resources. But the High Court of Australia, under section 75(iii) and (iv) of the Australian Constitution, enjoys original jurisdiction with respect to all matters “(iii) in which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party” and “(iv) between States, or between residents of different States, or between a State and a resident of another State.”

As such, the Commonwealth or any state may bring an action against another unit of government within the Australian federation with respect to water resources. This allows the High Court to deal with any issues that might arise as to the interpretation of sections 51(i)–98 and 100, and in relation to any of the powers that may otherwise be construed to apply to water. Throughout the course of federation, some states have threatened the use of section 75 to force an interpretation of the federal allocation of power over water resources, even going so far as to issue a writ; however, no such action has yet reached the High Court.¹¹²

As in the United States, the Commonwealth’s powers found in sections 51(i)–98 and 100 are paramount,¹¹³ and exercisable only by the Parliament,¹¹⁴ a position bolstered by the High Court’s centralizing interpretation of Commonwealth legislative powers generally in *Amalgamated Society of Engineers v. Adelaide Steamship Co. Ltd.* (the *Engineer’s Case*). The High Court held that Commonwealth legislative powers were to be interpreted in a full and plenary fashion, without regard to the impact of that reading on state power.¹¹⁵ This is significant, not for its direct impact on the nature of Commonwealth power over water, but for what it foreshadowed with respect to that power generally, as the historic necessity of the specific express powers found in sections 51(i)–98 and 100 faded. Water trade on the River

¹¹¹ *Id.* § 409. On the meaning of “reasonable use,” “the waters of rivers,” and “irrigation,” see *id.* §§ 419–421.

¹¹² CHRIS GUEST, *SHARING THE WATER: ONE HUNDRED YEARS OF RIVER MURRAY POLITICS* 15, 89–91, 123 (2016).

¹¹³ See *Australian Constitution* s 109.

¹¹⁴ See *The Victorian Stevedoring & Gen. Contracting Co. Proprietary Ltd. v Dignan* (1931) 46 CLR 73, 101 (Dixon, J.) (Austl.).

¹¹⁵ *Amalgamated Soc’y of Eng’rs v Adelaide Steamship Co. Ltd* (1920) 28 CLR 129 (Austl.).

Murray was, shortly after federation in 1901, a thing of the past, having been replaced by railroads.¹¹⁶ In short order, then,

[s]ections 98 and 100 were [shown to be] a compromise of the worst sort, because they separately responded to the interests of the two sides [New South Wales and Victoria on one side and South Australia on the other]. The compromise meant that the conflict between navigation and the reasonable use of waters for irrigation was in a sense enshrined in the Constitution. It was not clear how the Commonwealth might exercise its power in relation to navigation, without interfering with the 'reasonable use of water.' Nor was the conflict settled between the states themselves over River Murray water. Given the earlier recognition by the states of the need for a political resolution, a future High Court . . . was not likely to be helpful in resolving conflicts over water.¹¹⁷

Following the *Engineer's Case*, both the Commonwealth and the state governments looked anew at the constitutional settlement in the hopes that it might provide a solution to an otherwise insoluble problem. It did not. True, other express Commonwealth powers appear capable of exercise with respect to water, and these powers can be divided into two categories: noncoercive and coercive.¹¹⁸ The former includes the power to make conditional grants,¹¹⁹ to appropriate money for Commonwealth purposes,¹²⁰ and a Commonwealth request for the states to refer their powers to the Commonwealth.¹²¹ The latter includes the corporations power,¹²² the external affairs power,¹²³ the trade and commerce power,¹²⁴ the power to acquire property on just terms,¹²⁵ and the implied power to make laws with respect to nationhood.¹²⁶ In light of an expansive post-*Engineer's Case* reading, it seemed possible that section 100 itself may take on new life.¹²⁷ With respect to each of these powers, the Commonwealth Parliament has the power—as is the case with the Necessary and Proper Clause of the U.S. Constitution—

¹¹⁶ NOEL GEORGE BUTLIN, INVESTMENT IN AUSTRALIAN ECONOMIC DEVELOPMENT 1861–1900 358–69 (1964).

¹¹⁷ GUEST, *supra* note 112, at 15.

¹¹⁸ Kildea & Williams, *supra* note 97, at 603–08.

¹¹⁹ *Australian Constitution* s 96.

¹²⁰ *Id.* s 81.

¹²¹ *Id.* s 51(xxxvii).

¹²² *Id.* s 51(xx).

¹²³ *Id.* s 51(xxix).

¹²⁴ *Id.* s 51(i).

¹²⁵ *Id.* s 51(xxi).

¹²⁶ See Kate Stoeckel, *Introduction*, in AUSTRALIAN WATER LAW 5 (Kate Stoeckel et al. eds., 2012).

¹²⁷ Kildea & Williams, *supra* note 97, at 602–10.

to make laws for the peace, order, and good government of the Commonwealth with respect to . . . matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.¹²⁸

Yet, as in the United States, none of these constitutional powers deal with water specifically—with the exceptions of sections 98 and 100, which envisage the use of water for trade and irrigation. This means that each constitutional power, in its post-federation form, would require a degree of construction so as to extend its scope to water resources. The Australian states were in no better position with respect to the constitutional power to deal with water, as we will see in the next section.

b. State Powers

As in the United States, Commonwealth legislation within its sphere of competence enjoys paramountcy over state legislation.¹²⁹ Still, apart from the commerce power and its limitation in relation to the reasonable use of waters within the states, and from the potential post-*Engineer's Case* use of Commonwealth noncoercive and coercive powers with respect to water, the constitution expressly says nothing further about Commonwealth power with respect to water.¹³⁰ As such, by virtue of sections 106–108, the constitution left “the management of water resources largely in the hands of the states” as a consequence of their plenary legislative power over natural resources.¹³¹ Jennifer McKay summarizes those powers this way: “the general position is that the states have plenary legislative power over management of water resources, subject to any restrictions in the Constitution, including any inconsistent federal legislation on the matter.”¹³² The states therefore retain power to establish their own body of water resources law with respect to the allocation and use of water for land use, agriculture,

¹²⁸ *Australian Constitution* s 51(xxxix).

¹²⁹ *Id.* s 109. See also Vince Morabito & Henriette Strain, *The Section 109 Cover the Field Test of Inconsistency: An Undesirable Legal Fiction*, 12 U. TAS. L. REV. 182 (1993).

¹³⁰ Stoeckel, *supra* note 126, at 5–6.

¹³¹ Kildea & Williams, *supra* note 97, at 602.

¹³² Jennifer McKay, *Water Law in the Australian Federation: The Move Towards Centralism* 5 (presented at Water Management in Federal and Federal-Type Systems, Zaragoza, Spain, July 7–9, 2008), http://www.forumfed.org/libdocs/SpainWater2008/Jennifer%20McKay_en_final.pdf [<https://perma.cc/E33V-29CJ>].

forestry, town planning, and floodplains.¹³³ The states have exercised and continue to exercise these powers extensively and aggressively over the course of federation in an effort to “nationalize” water as part of a comprehensive body of law.¹³⁴ These efforts further the state effort to replace the inherited English common law doctrine of riparian rights with state control and legislative water use rights.¹³⁵

In both the United States and Australia, the federal system splits authority over water resources between federal and state governments, leaving neither capable alone of dealing with the integrated whole. This necessitates cooperative agreements between the federal and state governments. We turn now to the principle agreements used in an attempt to foster cooperative federalism in the Colorado River and Murray-Darling Basins.

II COOPERATIVE OR FLEXIBLE FEDERALISM?

As a result of the federal division of powers over water, the potential for “any unilateral legislative action” by the federal government is “necessarily . . . partial.”¹³⁶ Therefore, “[o]ver the years, a high degree of cooperation has evolved between various agencies of the federal government and the states in the formulation and administration of water plans.”¹³⁷ This is a fundamental, indeed, necessary adjunct of federalism, which is “consistent with any degree of common or co-operative or parallel action between the unit governments, provided it is in a substantial degree voluntary.”¹³⁸ Cooperation is not limited to

¹³³ Kildea & Williams, *supra* note 97, at 602 (citing Anne Twomey, *Aspirational Nationalism or Opportunistic Federalism?*, QUADRANT 38–39 (2007)). See also QUICK & GARRAN, *supra* note 105, § 409. On the body of State water law, see AUSTRALIAN WATER LAW, *supra* note 44. The latest example of such comprehensive legislation enacted pursuant to State constitutional powers over natural resources is South Australia’s *Landscape South Australia Bill 2019* (SA) (passed House of Assembly, June 4, 2019), which will repeal the *Natural Resources Management Act 2004* (SA). See also David Speirs, *Landscape South Australia Bill Paves Way for Major NRM Reform* (Mar. 20, 2019), <https://www.premier.sa.gov.au/news/media-releases/news/landscape-south-australia-bill-paves-way-for-major-nrm-reform> [<https://perma.cc/EF3T-3SCU>].

¹³⁴ P.N. Davis, *Nationalization of Water Use Rights by the Australian States*, 9 U. Queensl. L.J. 1, 2 (1975).

¹³⁵ See *id.*

¹³⁶ Kildea & Williams, *supra* note 97, at 602.

¹³⁷ Engelbert, *supra* note 64, at 337; see also Sandford D. Clark, *The Murray-Darling Basin: Divided Power, Co-Operative Solutions?*, 22 AUSTL. RESOURCES & ENERGY L.J. [iv] 322 (2003).

¹³⁸ SAWER, *supra* note 55, at 2.

water resources; instead, it happens, and happens frequently in many spheres of intergovernmental activity in the American and Australian federal systems. In Australia, for instance, “the increase in such [co-operative] activities . . . since 1928 has been as marked as the increase in direct Commonwealth power.”¹³⁹

A “Byzantine complexity”¹⁴⁰ characterizes the nature of the cooperative, flexible, or marble cake federalism with respect to water law in California and South Australia—and, indeed, in the water law of the whole of Australia and the southwestern United States. It is not our objective here to assess the whole of this law.¹⁴¹ Rather, we want, first, to provide an overview of a representative example of the nature of cooperative federalism drawn from each jurisdiction concerning their major water supply rivers—the Colorado and the Murray Rivers (watercourses not contained entirely within the relevant state’s boundaries). As we will see in the next two sections, a unique body of law in each jurisdiction seeks to achieve cooperative federalism for the provision of water supply. Having presented these representative examples, Part III provides an example of the sort of dispute to which this cooperative federalism can give rise—in the case of California, over the U.S.-California Central Valley Agreement, and in South Australia, over the National Water Initiative 2004 and the Water Act 2007 (Cth).

We argue that both the California and the South Australian efforts at cooperative federalism fail, not through a lack of will to cooperate, but because they are doomed from the start. Both efforts are founded upon federalism, which, no matter the extent of cooperation engendered, cannot ever allow for the effective, comprehensive management of the entirety of the integrated whole of the water resource. We turn, then, to the attempts at cooperative federalism found in California and South Australia.

A. United States-California: “The Law of the River” and the Colorado River Compact

The “Law of the River” represents a primary example of the Byzantine complexity that characterizes the cooperative water law

¹³⁹ *Id.*

¹⁴⁰ See BRUNO LATOUR, THE MAKING OF LAW: AN ETHNOGRAPHY OF THE CONSEIL D’ÉTAT (Marina Brilman et al. trans., Polity Press 2009) (2002).

¹⁴¹ For a full background to the various Australian attempts at interstate water management, see Kate Stoeckel & Susanna Lawrence, *Water Planning and Management*, in AUSTRALIAN WATER LAW 31–82 (Kate Stoeckel et al. eds., 2012).

flowing from federalism in the southwestern United States.¹⁴² It comprises the prior-appropriation doctrine¹⁴³ and

[t]he treaties, compacts, decrees, statutes, regulations, contracts and other legal documents and agreements applicable to the allocation, appropriation, development, exportation and management of the waters of the Colorado River Basin There is no single, universally agreed upon definition of the Law of the River, but it is useful as a shorthand reference to describe this longstanding and complex body of legal agreements governing the Colorado River.¹⁴⁴

David Owen provides a more colorful account:

Grady Gammage, Jr., a lawyer . . . once told an interviewer that, when he first became involved in water issues, he felt that every time he made a comment about the Colorado another lawyer would inform him that whatever he had just suggested was “prohibited by the Law of the River.” Gammage had been in practice for some time, but didn’t recognize the reference. “So I go to the Arizona Revised Statutes book and pull it down, and I look up ‘River, comma, Law of,’ and it’s not there.” He did the same with the United States Code, also without success. “It turns out that the Law of the River is kind of like the British Constitution,” he continued. “It’s whatever the people who have really been hanging around it a long time think it is.” Invoking it, furthermore, is a privilege reserved for those who have undergone what Gammage called “the Water Buffalo ceremonial admittance rites.” Water Buffaloes are old-school western-water experts: managers, engineers, diverters, legislators, and lawyers, almost all of them men, whose long immersion in river-related discussion, arguments, negotiations, and lawsuits has made them deeply suspicious of non-Water Buffaloes and has convinced them that wet water [actual flow of the Colorado River] is, in many

¹⁴² See IMPERIAL IRRIGATION DIST., *supra* note 61. For a general, and excellent, history of water in the American southwest, see MARC REISNER, *CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER* (2nd ed. 1993).

¹⁴³ The law that came to replace the English law riparian rights doctrine in the southwestern United States; for an overview of this, see Babie, Leadbeter & Nikias, *supra* note 29.

¹⁴⁴ U.S. DEP’T OF THE INTERIOR BUREAU OF RECLAMATION, COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY (EXECUTIVE SUMMARY) 3, at n.1 (2012) [hereinafter COLORADO RIVER BASIN WATER STUDY]. See also *Colorado River Basin Water Management Case Study*, in ASPECTS OF GOVERNING WATER ALLOCATION IN THE U.S. 76–88 (Maria T. Lantz et al. eds., 2014); IMPERIAL IRRIGATION DIST., *supra* note 61; Greg Hobbs, Jr., *History of Colorado River Law, Development and Use: A Primer and Look Forward*, in *HARD TIMES ON THE COLORADO RIVER: DROUGHT, GROWTH AND THE FUTURE OF THE COMPACT* (Natural Res. L. Ctr., U. Colo. Sch. L. ed., 2005). For a detailed chronology of the law of the river, see *Law of the River*, CENT. ARIZ. PROJECT, <https://www.cap-az.com/about-us/law-of-the-river> [<https://perma.cc/T7GR-JCDW>] (last visited Mar. 20, 2020).

ways, less significant than paper water [theoretical rights to the Colorado River's flow].¹⁴⁵

This account demonstrates the difficulties involved in managing a resource that is an integrated whole when those attempting to do so each enjoy a fragmented portion of the necessary power—in other words, the difficulty of applying federalism to water resources. For our purposes, then, we outline the Law of the River only as it applies to California's water supply. That is enough to demonstrate the difficulties created by federalism. The principle components of that story involve Los Angeles' thirst for more water, the Colorado River Compact of 1922, and the subsequent *Arizona v. California* litigation in the United States Supreme Court.

For as long as First Nations peoples gathered to live in the area around Los Angeles, the arroyo that came to be known as the Los Angeles River supplied the communities' water needs. The small populations there attracted the first European colonizers from Spain in 1769, who established a pueblo and imposed Spanish water law. Europeans were followed by Americans—the California Republic was formed in 1848 and entered the Union in 1850—especially those moving west to find their fortunes in gold. The Los Angeles River, as erratic as the course of its flow was, continued to water the growing community, although flash floods would periodically wipe out parts of the settlement. The government of the city of Los Angeles, as the settlement was called, took increasingly interventionist measures to control the location and flow of the watercourse, with the U.S. Army Corps of Engineers ultimately lining the entire length of the channel with concrete. It became apparent by the turn of the 19th century, though, that the Los Angeles River, even in a good year, would never be enough to supply the water demands of the growing city. The town fathers, led by William Mulholland, looked north, to the Owens Valley.¹⁴⁶

¹⁴⁵ DAVID OWEN, WHERE THE WATER GOES: LIFE AND DEATH ALONG THE COLORADO RIVER 6, 24 (2017); *Law of the River*, U.S. DEP'T INTERIOR, BUREAU RECLAMATION, <https://www.usbr.gov/lc/region/g1000/lawofrivr.html> [<https://perma.cc/6YJV-F4XX>] (last updated Mar. 2008) (this source also provides the full text of each of the elements of the Law of the River). For a more detailed account, see Lawrence J. MacDonnell, David H. Getches & William C. Hugenberg, Jr., *The Law of the Colorado River: Coping with Severe Sustained Drought*, 31 WATER RESOURCES BULL. 825 (1995).

¹⁴⁶ For a timeline of this history, see *California Water Timeline*, WATER EDUC. FOUND., <https://www.watereducation.org/aquapedia/california-water-timeline> [<https://perma.cc/FM2Y-WL55>] (last visited Mar. 20, 2020). For excellent histories, see WILLIAM DEVERELL & TOM SITTON, WATER AND LOS ANGELES: A TALE OF THREE RIVERS, 1900–1941 (2017);

The Owens River, northeast of Los Angeles, seemed to be the answer to Los Angeles's water supply problems. Led by Mulholland, the city of Los Angeles began to buy up the existing water rights of landholders in the Owens Valley. Between 1908 and 1913, the Los Angeles Aqueduct was constructed, hoisting Owens water over the Sierra Nevada, bringing it south to Los Angeles. But demand soon outstripped this supply, too. And so, the city cast its eyes further afield. But where? California, and especially Southern California, largely semiarid and arid, had little additional supply.¹⁴⁷ But further east, a seemingly wild and untamed river carried with it an entirely untapped flow—perhaps this would be the answer to Los Angeles's water prayers. The river? The Colorado.¹⁴⁸

The Colorado River Basin takes in two nations—Mexico and the United States—and seven states—Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming.¹⁴⁹ Putting the international dimension to one side, given the federal structure of the United States, it goes without saying that no one unit of government, federal or state, is capable of dealing with the entirety of the Colorado River. Unsurprisingly, this fragmentation of power over the river among so many competing demands and priorities has rendered this “iconic yet diminished . . . river . . . more an ‘industrial project’ than a natural waterway, a river long stripped of its wildness and freedom.”¹⁵⁰

Fuller, *supra* note 43; REISNER, *supra* note 142; WORSTER, *supra* note 17; OWEN, *supra* note 145. *See also* these documentaries: CADILLAC DESERT (PBS Documentary 1992); LOS ANGELES: CITY OF THE FUTURE? (BBC Documentary 1997); *Water & Power: A California Heist*, NAT'L GEOGRAPHIC, <https://www.natgeotv.com/za/shows/natgeo/water-power-a-california-heist> [<https://perma.cc/G9H4-JTD7>] (last visited Mar. 20, 2020); *Parched*, NAT'L GEOGRAPHIC, <https://www.natgeotv.com/za/shows/natgeo/parched> [<https://perma.cc/9LXA-LE7G>] (last visited Mar. 20, 2020).

¹⁴⁷ ROBERT GOTTLIEB & MARGARET FITZSIMMONS, *THIRST FOR GROWTH: WATER AGENCIES AS HIDDEN GOVERNMENT IN CALIFORNIA* xv (1991).

¹⁴⁸ On this story, see the somewhat historically inaccurate, but nonetheless intriguing movie *CHINATOWN* (Paramount Pictures 1974). For a timeline, see *California Water Timeline*, *supra* note 146. *See also* DEVERELL & SITTON, *supra* note 146; REISNER, *supra* note 142; WORSTER, *supra* note 17; OWEN, *supra* note 145; CADILLAC DESERT, *supra* note 146; LOS ANGELES: CITY OF THE FUTURE?, *supra* note 146; *Water & Power: A California Heist*, *supra* note 146; *Parched*, *supra* note 146.

¹⁴⁹ *See* Diagram 1.

¹⁵⁰ Clark et al., *supra* note 37, at 793, 818–23.

Diagram 1

Colorado River Basin and California Water Delivery Systems and Facilities (Including the Sacramento River)



AB Country
 Ab State
 ○ City
 — National Border
 - - - State Border

Ab Basin
 Basin Boundary
 ■ Dam
 River
 Aqueduct | Canal

km
 0 200 400 600

How, then, given the overlapping and conflicting jurisdictions of two nations and nine different governmental units, could the flow of the Colorado River be harnessed in slaking Los Angeles's thirst? The convergence of the interstate compacts power of the United States Congress, coupled with the equitable apportionment original jurisdiction of the United States Supreme Court, gave birth to the Colorado River Compact of 1922 (the 1922 Compact)¹⁵¹ and the ongoing *Arizona v. California* litigation¹⁵² which, to date, has resulted in nine Supreme Court orders apportioning the flow of the Colorado River among the seven party states.¹⁵³ The 1922 Compact seemed the answer to Los Angeles's water needs.

1. Interstate Compacts: Colorado River Compact of 1922

The 1922 Compact, a treaty among the United States (through the U.S. Department of the Interior, Federal Bureau of Reclamation) (Reclamation)¹⁵⁴ and the seven states that fall within the Colorado Basin

[d]ivide[d] the available water [of the Colorado] between an "Upper" and "Lower" Basin with the geographic division at Lee Ferry in northern Arizona. This agreement . . . allocates 15 million acre-feet ("maf") of annual "exclusive beneficial consumptive use," 7.5 maf each to the Upper and Lower Basins, with an additional maf to the Lower Basin. The [1922] Compact also anticipated additional water being committed to Mexico and future allocation to the two Basins of "surplus" water.¹⁵⁵

The cooperation embodied in the 1922 Compact—to which Arizona would not accede until 1944—was an attempt to provide a share of the Colorado River water to each of the seven signatory states for "agricultural, residential, and industrial use and to compete for the hydroelectric power" produced at the largest dam then known to human

¹⁵¹ *Colorado River Compact*, H.R. Doc. No. 605, 67th Cong., 4th sess., (1923). *See also* DEVERELL & SITTON, *supra* note 146.

¹⁵² *Arizona v. California*, 283 U.S. 423 (1931); 292 U.S. 341 (1934); 298 U.S. 558 (1936); 373 U.S. 546 (1963); 376 U.S. 340 (1964); 383 U.S. 268 (1966); 439 U.S. 419 (1979); 460 U.S. 605 (1983); 466 U.S. 144 (1984); 531 U.S. 1 (2000).

¹⁵³ For a timeline see *California Water Timeline*, *supra* note 146. *See also* DEVERELL & SITTON, *supra* note 146; Fuller, *supra* note 43; REISNER, *supra* note 142; WORSTER, *supra* note 17; OWEN, *supra* note 145; CADILLAC DESERT, *supra* note 146; LOS ANGELES: CITY OF THE FUTURE?, *supra* note 146; *Water & Power: A California Heist*, *supra* note 146; *Parched*, *supra* note 146.

¹⁵⁴ *See* Joe Gelt, *Sharing Colorado River Water: History, Public Policy and the Colorado River Compact*, 10 WATER RESOURCES RES. CTR. (1997).

¹⁵⁵ MacDonnell et al., *supra* note 145, at 825.

history: the Hoover.¹⁵⁶ It also contained provisions to meet the federal government's obligations to the "Indian tribes."¹⁵⁷ Soon, though, two things became apparent: first, that 1922 had been a particularly wet year, which meant that allocations based on what seemed an abundance of water could in fact never be satisfied in those years that were nowhere near as wet as 1922. There was scarcely enough water to meet the state obligations, let alone provide for any surplus.¹⁵⁸ Second, with respect to an already scarce supply of water, "Los Angeles emerged as the leading force in the West to bring the [Hoover Dam] project to fruition and obtain much of the water and resulting hydroelectricity for itself."¹⁵⁹

The 1922 Compact is the first of thirteen primary elements that together constitute the Law of the River.¹⁶⁰ As we noted above, we do not propose an exhaustive review of each of those elements. Instead, we provide here a brief overview of eleven of the elements other than the 1922 Compact, as well as the twelfth, the *Arizona v. California* litigation.¹⁶¹ The other eleven elements of the Law of the River are as follows:

1. Boulder Canyon Project Act of 1928—ratified the 1922 Compact, authorized the construction of the Hoover Dam, and apportioned flow among the lower basin states of Arizona, California, and Nevada.¹⁶²
2. California Seven Party Agreement of 1931—helped settle a dispute among seven intra-California municipal and agricultural interests over California's share of Colorado River water.¹⁶³
3. Mexican Water Treaty of 1944—committed 1.5 maf of the Colorado River's annual flow to Mexico.¹⁶⁴

¹⁵⁶ DEVERELL & SITTON, *supra* note 146, at 58; *see also* WORSTER, *supra* note 17; STATE OF THE ROCKIES PROJECT 2011–12 RESEARCH TEAM, THE COLORADO RIVER BASIN: AN OVERVIEW (2012).

¹⁵⁷ *Colorado River Compact*, *supra* note 151, at art. VII. *See also* STATE OF THE ROCKIES PROJECT 2011–12 RESEARCH TEAM, *supra* note 156.

¹⁵⁸ MacDonnell et al., *supra* note 145; Stan. Univ. Rural W. Initiative, *supra* note 42.

¹⁵⁹ DEVERELL & SITTON, *supra* note 146, at 58.

¹⁶⁰ *See* OWEN, *supra* note 145, at 26; *see also* *Law of the River*, *supra* note 145.

¹⁶¹ *See* *Law of the River*, *supra* note 145 (summarizing and providing full text of each element of the Law of the River).

¹⁶² Boulder Canyon Project Act, 43 U.S.C.A. § 617 (Westlaw through Pub. L. No. 116-91).

¹⁶³ *Law of the River*, *supra* note 145.

¹⁶⁴ Treaty between the United States and Mexico Respecting Utilization of Waters of Colorado and Tijuana Rivers and of the Rio Grande, U.S.-Mex., Feb. 3, 1944, 59 Stat. 1219. *See also* *Law of the River*, *supra* note 145.

4. Upper Colorado River Basin Compact of 1948—created the Upper Colorado River Commission and apportioned the Upper Basin’s flow among Colorado, New Mexico, Utah, and Wyoming, as well as the part of Arizona that lies within the Upper Basin.¹⁶⁵
5. Colorado River Storage Project of 1956—provided a comprehensive Upper Basin-wide water resource development plan and authorized the construction of a number of dams for river regulation and power production.¹⁶⁶
6. Colorado River Basin Project Act of 1968—authorized a number of projects in both the Upper and Lower Basins, including the Central Arizona Project (CAP). Most significantly, it made the CAP water supply subordinate to California’s apportionment in times of shortage.¹⁶⁷
7. Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs of 1970—coordinated the operation of reservoirs in the Upper and Lower Basins.¹⁶⁸
8. Minute 242 of the U.S.-Mexico International Boundary and Water Commission of 1973—required the United States to take actions to reduce the salinity of water being delivered to Mexico.¹⁶⁹
9. Colorado River Basin Salinity Control Act of 1974—authorized desalting and salinity control projects to improve Colorado River quality.¹⁷⁰
10. Endangered Species Act of 1973—provided for the conservation of endangered and threatened species of fish, wildlife, and plants throughout the United States.¹⁷¹
11. Native American Water Claim Settlements—involved litigated and negotiated “settlements . . . between tribes, the federal government, states, water districts, and private water users” and which, “[a]fter being negotiated, approv[ed] and implement[ed] . . . require federal action.”¹⁷² In the case of the Colorado River,

¹⁶⁵ *Law of the River*, *supra* note 145.

¹⁶⁶ *Id.*

¹⁶⁷ Colorado River Basin Project Act, 43 U.S.C.A. § 1521 (Westlaw through Pub. L. No. 116-91). *See also* *Law of the River*, *supra* note 145.

¹⁶⁸ *Law of the River*, *supra* note 145.

¹⁶⁹ *Id.*

¹⁷⁰ Colorado River Basin Salinity Control Act, Pub. L. No. 93-320 (1974). *See also* *Law of the River*, *supra* note 145.

¹⁷¹ Endangered Species Act of 1973, 16 U.S.C.A. §§ 1531–1544. *See also* *Law of the River*, *supra* note 145.

¹⁷² CONGRESSIONAL RESEARCH SERVICE, INDIAN WATER RIGHTS SETTLEMENTS (CRS Report R44148, updated Apr. 16, 2019), <https://fas.org/sgp/crs/misc/R44148.pdf> [<https://perma.cc/SAF7-EPB4>] (this report contains a full list of Native American Water Claim Settlements).

this federal action is authorized by article VII of the 1922 Compact.¹⁷³

With this background to the Law of the River effected through the interstate compacts power in place, we turn now to an assessment of the role played in the development of that law through the Supreme Court's original jurisdiction contained in the equitable apportionment power.

2. *Equitable Apportionment: Arizona v. California*

The entirety of the Law of the River requires adjudication of disputes relating to the allocation of flow effected by the 1922 Compact. As we saw in Part I, the Supreme Court may exercise its original jurisdiction pursuant to the equitable apportionment power under the Constitution as an adjunct to Congress' interstate compacts power to allocate water supply of rivers under federal jurisdiction among states subject to an interstate compact. This has allowed the Supreme Court to become involved in the allocation of Colorado River water in one of the longest-running litigations in the history of the republic. The dispute, *Arizona v. California*, is still ongoing and has to date produced ten orders adjusting the allocation of Colorado River water pursuant to the 1922 Compact in each of the following years: 1931, 1934, 1936, 1963, 1964, 1966, 1979, 1983, 1984, and 2000.¹⁷⁴ The first order specified the amount of water to which Arizona was entitled under the 1922 Compact. Each subsequent order was the outcome of new claims made by Arizona that California was using more than its share of water pursuant to the 1922 Compact and its application by the Court in the earlier orders.¹⁷⁵

The Supreme Court issued the most significant orders affecting the Law of the River in 1963, 1964, and 1979.¹⁷⁶ In 1963, the Court sought to resolve what was then a twenty-five-year-old dispute between Arizona and California stemming from Arizona's desire to build the Central Arizona Project, which would allow Arizona to use its full water apportionment.¹⁷⁷ California objected on the basis that Arizona's

¹⁷³ *Law of the River*, *supra* note 145.

¹⁷⁴ *Arizona v. California*, 283 U.S. 423 (1931); 292 U.S. 341 (1934); 298 U.S. 558 (1936); 373 U.S. 546 (1963); 376 U.S. 340 (1964); 383 U.S. 268 (1966); 439 U.S. 419 (1979); 460 U.S. 605 (1983); 466 U.S. 144 (1984); 531 U.S. 1 (2000).

¹⁷⁵ *See Arizona v. California*, 283 U.S. 423 (1931).

¹⁷⁶ *Arizona v. California*, 373 U.S. 546 (1963); 376 U.S. 340 (1964); 439 U.S. 419 (1979).

¹⁷⁷ *Arizona v. California*, 373 U.S. 546 (1963).

use of water from a Colorado tributary constituted use of its Colorado River apportionment and that California had over time acquired a right to some of Arizona's apportionment through the doctrine of prior appropriation.¹⁷⁸ The Court found that lower basin states have a right to appropriate and use Colorado tributary flows and that the doctrine of prior appropriation did not apply to apportionments in the lower basin.¹⁷⁹ In 1964, the Court enjoined the U.S. Secretary of the Interior from delivering water outside the framework of apportionments defined by the law and mandated the preparation of annual reports documenting water use in the lower basin states.¹⁸⁰ And in 1979, the Court interpreted the meaning of "present perfected rights" pursuant to article VIII of the 1922 Compact, which, it held, took priority over later contract entitlements established under state law.¹⁸¹

B. Commonwealth-South Australia: "Water Law" and The Murray-Darling Basin Plan

Long before the arrival of Europeans, the Aboriginal peoples of the Murray-Darling Basin practiced "active and careful management of natural resources," including management of the river known to the Ngarrindjeri people as the Murrurundi, to the Yorta Yorta as the Dunghala, and to the Wiradjuri as the Millewa.¹⁸² Chris Guest recounts that

[a] landowner near Swan Hill recorded traditional stories of the Wati Wati people, which included accounts of food production, soil preparation and storage of surplus at harvest time. The use of fish traps, dams and fishing techniques was observed throughout the Murray-Darling Basin. The construction of permanent dwellings, enclosed compounds for containing animals, and seasonal fire management of grassland and woodlands for hunting and harvesting were all noted.¹⁸³

¹⁷⁸ *Id.* at 12–13.

¹⁷⁹ *Id.* at 565–67.

¹⁸⁰ *Arizona v. California*, 376 U.S. 340, 341–46 (1964).

¹⁸¹ *See Arizona v. California*, 439 U.S. 419 (1979); *Law of the River*, *supra* note 145, at 33.

¹⁸² GUEST, *supra* note 112, at 4. *See generally* BILL GAMMAGE, *THE BIGGEST ESTATE ON EARTH: HOW ABORIGINES MADE AUSTRALIA* (2012). For a map of Aboriginal Australia see <https://aiatsis.gov.au/explore/articles/aiatsis-map-indigenous-australia> [<https://perma.cc/52EP-96AW>] (last visited Mar. 20, 2020).

¹⁸³ GUEST, *supra* note 112, at 4 (quoting BRUCE PASCOE, *DARK EMU, BLACK SEEDS: AGRICULTURE OR ACCIDENT?* 36 (2014)).

Indeed, not unlike the modern European descendants' approach to land and water use in contemporary United States and Australia, Gammage writes that

[t]he Law—an ecological philosophy enforced by religious sanction—compelled people to care for all their country. People lived and died to ensure this. The Law prescribed that people leave the world as they found it [A]n uncertain climate and nature's restless cycles demanded myriad practices shaped and varied by local conditions. Management was active not passive, alert to season and circumstance, committed to a balance of life.¹⁸⁴

And it was not long after the arrival of Europeans on the Australian continent before they too came to understand the importance of the “Mighty Murray”—an understanding that only grew with each passing year of European occupation.¹⁸⁵ Former Prime Minister Paul Keating explains why: “The Murray-Darling is Australia’s greatest river system, a basic source of our wealth, a real and symbolic artery of the nation’s economic health, and a place where Australian legends were born. Nowhere is the link between the Australian environment, the Australian economy and Australian culture better described.”¹⁸⁶ As we have seen, the “rivers question” came to summarize the importance of the Murray-Darling system as the form of power in pre- and post-federation Australia. This power is both intangible—in its economic, political, and social importance—and tangible, because the Basin covers fourteen percent of the Australian continent¹⁸⁷ and takes in four of the federated states (New South Wales, Queensland, South Australia, and Victoria) and one Commonwealth territory (the Australian Capital Territory).¹⁸⁸

¹⁸⁴ GAMMAGE, *supra* note 182, at 2.

¹⁸⁵ GUEST, *supra* note 112, at 8–10.

¹⁸⁶ *Id.* at viii (quoting Paul Keating, Statement on the Environment, 21 December 1992, Adelaide).

¹⁸⁷ Bill McCormick, *Murray-Darling Basin Management*, PARLIAMENT AUSTRALIA, https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook44p/MurrayDarlingBasin [https://perma.cc/C2TT-CGWG] (last visited Mar. 20, 2020).

¹⁸⁸ See *infra* Diagram 2.

Diagram 2

**Murray-Darling River Basin and
South Australia Water
Delivery Systems and Facilities**

Ab State
○ City
--- State Border

Ab Basin
Basin Boundary
River

km 0 200 400 600

Yet, as with the Colorado River, the Australian constitutional settlement of power over water left no one unit of government, Commonwealth, state, or territory with the power to deal with the management and allocation of water in an integrated way over the whole of the Murray-Darling Basin. As such, the Commonwealth, state, and territory governments have attempted to use cooperative federalism to fill the gap.¹⁸⁹ The Commonwealth-state efforts to “share the water” have demonstrated nothing but the same Byzantine complexity exhibited by the allocation of power over water in the United States and California.¹⁹⁰

And also not unlike what one finds with respect to the Colorado River, the outcome of Australian attempts at cooperative federalism over water, and especially over the Murray-Darling Basin, have resulted in a contemporary “patchwork of legal fields.”¹⁹¹ This patchwork is found in Commonwealth, state, and intergovernmental Commonwealth-state law and policy, known collectively in Australia as “water law,”¹⁹² which consists of:

- jurisprudence concerning the fundamental nature of the right to use water, which is a vital aspect underpinning water resource management regimes;
- resource management frameworks intended to manage potentially competing or conflicting uses of limited water resources by balancing economic, social and environmental needs;
- legal and regulatory frameworks that allow an individual to use and control water resources, subject to compliance with any conditions or restrictions imposed in order to achieve the objectives of natural resource management frameworks;
- regimes to permit the dealing or trading in individual water rights, reflecting a market-based approach to resource management, which facilitates water being able to move to its highest value use when it is scarce;
- economic regulatory frameworks designed to facilitate timely and appropriate levels of investment in water and sewerage infrastructure, and to ensure continuity of service, as well as to protect consumer interests . . . ;

¹⁸⁹ See Stoeckel, *supra* note 126, at 1–10; Clark, *supra* note 137; Adam Webster, *Sharing Water from Transboundary Rivers in Australia — An Interstate Common Law?*, 39 MELBOURNE U. L. REV. 263 (2015).

¹⁹⁰ This appellation is borrowed from GUEST, *supra* note 112.

¹⁹¹ Stoeckel, *supra* note 126, at 1.

¹⁹² *Id.*

- environmental protection laws to protect water quantity by facilitating conservation practices . . . and water quality by protecting against and penali[z]ing activities that cause pollution; and
- laws and regulations governing the catchment, abstraction and distribution of water safely and in sufficient quantities to the public for domestic consumption, and the collection, treatment and disposal of sewage to acceptable public health and environmental standards.¹⁹³

As with California, we seek here to provide an overview of one example of the cooperative attempts that today form part—indeed, the most significant part—of Australian water law: the long and tortuous history of the National Water Initiative 2004, the Water Act 2007 (Cth), and the Murray-Darling Basin Authority and Plan.¹⁹⁴

As we have seen, the Australian “rivers question” concerned the allocation of governmental power over control of the basin’s water resources,¹⁹⁵ answers to which have been sought since well before federation in 1901. Between 1884 and 1887, each of the colonies that would later become the states of New South Wales, South Australia, and Victoria conducted its own royal commissions into the management of the Murray-Darling system, which formed the background to the constitutional conventions held between 1891 and 1898.¹⁹⁶ Those conventions would ultimately adopt the text of the constitution as it was enacted in 1901. The 1895–1902 “federation drought” spurred the same states to hold a joint government-industry conference, resulting in another royal commission. This eventually resulted in the River Murray Waters Agreement of 1914, which set out the respective states’ shares of water, and established the River Murray Commission for the regulation and management of the river. The River Murray Commission operated for seventy years before it was replaced in 1987 with the Murray-Darling Basin Ministerial Council and the Murray-Darling Basin Commission (MDBC). This expanded the scope of the original 1914 agreement, replaced by the Murray-Darling Basin Agreement 1987, to the whole of the Murray-Darling Basin

¹⁹³ *Id.* at 1–10.

¹⁹⁴ For the history of those efforts, *see generally* GUEST, *supra* note 112; Stoeckel, *supra* note 126.

¹⁹⁵ *See supra* Section I.B.2.

¹⁹⁶ For a good overview of the history of the water dispute in Australia, *see generally* BRET WALKER, MURRAY-DARLING BASIN ROYAL COMMISSION REPORT 79–99 (2019) [hereinafter ROYAL COMMISSION REPORT].

(Queensland became a party to the agreement in 1992, and the Australian Capital Territory in 1998).¹⁹⁷

In 1994, the Council of Australian Governments (COAG) (itself an effort at intergovernmental cooperation) established a water reform agenda, and between 1999 and 2005 it sought to include issues related to national water management within a national competition policy. In 2003, seeking a refresh of the 1994 agenda so as “to increase the productivity and efficiency of water use, sustain rural and urban communities, and ensure the health of river and groundwater systems,” COAG implemented the National Water Initiative (NWI) of 2004, an intergovernmental agreement establishing a framework for national water reforms.¹⁹⁸ Every state and territory was to enact a legislative regime consistent with the NWI, so as to provide for certainty on which to base decisions about Australian water management, optimizing economic, social, and environmental outcomes.¹⁹⁹

In 2007, in an effort to move forward with the objectives set by the NWI, the Commonwealth government, relying upon its limited heads of constitutional power and a referral of state powers,²⁰⁰ enacted the Water Act 2007 (Cth).²⁰¹ The underlying rationale for this legislation was to return Murray-Darling water extraction levels to sustainable levels, allowing for the protection of and return to environmental health and balancing that against continued productive growth.²⁰² To meet these objectives, the Act established the Murray-Darling Basin Authority (MDBA) as a successor to the MDBC, which, coming into existence in 2008, became the first single agency with responsibility over water resource planning across the entire basin.²⁰³ The principle objectives of the MDBA were to prepare a strategic long-term basin plan setting sustainable and capped diversion limits and to develop water quality and salinity targets as well as an environmental watering

¹⁹⁷ GUEST, *supra* note 112, at vi–vii; *see also* ROYAL COMMISSION REPORT, *supra* note 196, at 237 (providing a full chronology of the Agreements dealing with the Murray-Darling over the course of Australian Federation).

¹⁹⁸ Stoeckel, *supra* note 126, at 8; GUEST, *supra* note 112, at 184–85.

¹⁹⁹ Stoeckel, *supra* note 126, at 8–9.

²⁰⁰ Each of New South Wales, Victoria, South Australia, and Queensland enacted a *Water (Commonwealth Powers) Act 2008*.

²⁰¹ Stoeckel, *supra* note 126, at 10. For a detailed account of the background to and enactment of the *Water Act 2007* (Cth), *see* GUEST, *supra* note 112, at 196–221.

²⁰² ROYAL COMMISSION REPORT, *supra* note 196, at 113–18.

²⁰³ *Water Act 2007* (Cth) ss 172–173; Stoeckel, *supra* note 126, at 6; GUEST, *supra* note 112, at vi–vii.

plan. The Murray-Darling Basin Plan (MDBP), the result of four years of intergovernmental negotiation, became law in 2012.²⁰⁴

The subtitle to this part of the Article is in the form of an interrogatory, by which we mean to ask whether cooperation through federalism really *can* be achieved between units of government holding fragments of power over water resources in California and South Australia. Notwithstanding what might seem to be successful cooperation in the law surrounding the 1922 Compact and the MDBP, the answer to that question is a resounding no, as we now show.

III

DISPUTES WITHIN THE COOPERATIVE USE OF CONSTITUTIONAL POWERS OVER WATER

As long ago as 1950, the U.S. President's Water Resources Policy Commission identified problems with the federal arrangement of powers over water, writing that "complete Federal assumption of responsibility" for the development of the nation's water resources "would destroy the effectiveness of the government of the States and work a profound and undesirable change in our traditional plan of government."²⁰⁵ And the Commission on Organization of the Executive Branch of the Government recommended that responsibility for water resources "should be discharged by state or local governments . . . or by private enterprise."²⁰⁶

The problem, which should already be obvious, is that a river, and water generally, "may come under both federal and state jurisdiction during the course of its flow and be subject to various types of appropriation, all of which calls for programs involving a high degree of coordinated planning and operation."²⁰⁷ As a solution, writing in 1957, Engelbert suggested strengthening the role of the states, in any one or a combination of six ways: administrative reorganization, policy formulation and planning, state review of federal programs, joint federal-state financing, joint federal-state management,

²⁰⁴ See *Basin Plan 2012*, made under subparagraph 44(3)(b)(i) of the *Water Act 2007* (Cth), <https://www.legislation.gov.au/Details/F2018C00451> [<https://perma.cc/B7WQ-6LSY>]. See also Stoeckel, *supra* note 126, at 10. For a detailed account of the background to and adoption of the MDBP, see GUEST, *supra* note 112, at 215–20.

²⁰⁵ PRESIDENT'S REPORT, *supra* note 62, at 2–3.

²⁰⁶ U.S. COMMISSION ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, TASK FORCE REPORT ON WATER RESOURCES AND POWER 36 (1955).

²⁰⁷ Engelbert, *supra* note 64, at 325, 344.

or intergovernmental administrative arrangements.²⁰⁸ In 1960, Sho Sato explored demands for legislative intervention, either federal or state.²⁰⁹ The point both Engelbert and Sato make is simply this: federalism is a poor means of allocating power over a resource like water.

Australia's water history reveals no greater success in making use of cooperative federalism. The process of federation in the late 1890s itself stumbled over the "rivers question."²¹⁰ During the federal movement in the late 19th century, South Australia's delegates to the constitutional conventions pushed for the new federation to be bestowed with the power to regulate the river, being concerned that leaving the river to the states would lead to inequity and the inability of the states to compromise.²¹¹ The eastern states—Victoria and New South Wales—refused; being richer, they were unwilling to give up their stake in the river system to appease South Australia (particularly New South Wales, which was eager to keep control of the Darling, located largely within its boundaries).²¹² Over one hundred years later, the South Australian Murray-Darling Royal Commission, which delivered its report on January 29, 2019, emphasized that the struggle of the late nineteenth century remains that of the early twenty-first century. The struggle is one of federal versus state interests: "South Australia had failed to achieve the desirable national character of the Basin's regulation as a topic for the national legislature; Victoria and New South Wales had succeeded in placing their local interests ahead of a national significance of the Basin."²¹³ In short, what was once thought the *virtue* of federalism (a fragmentation of power so as to prevent its concentration in one place held by a few hands) is in fact its *vice*—fragmenting control over what cannot be fragmented: the integrated whole of water resources. Water does not conform to the arbitrary boundaries set by federalism, nor does it abide by the allocation of public power to allocate use rights between the federal and state governments.

Our review of cooperation ought not to deceive us, for the examples of failure to cooperate are too numerous to fully recount here. For that reason, as with our review of cooperation, we have chosen but one

²⁰⁸ *Id.* at 344–50.

²⁰⁹ See generally Sato, *supra* note 68.

²¹⁰ ROYAL COMMISSION REPORT, *supra* note 196, at 102.

²¹¹ *Id.*

²¹² *Id.* at 102–03.

²¹³ *Id.* at 103; *cf. id.* at 112.

example of a dispute drawn from each of California and South Australia: in the case of the former, the dispute surrounding the United States Bureau of Reclamation–California Department of Water Resources Coordinated Operation Agreement 1986, which came to a head in 2018 and 2019; in the case of the latter, the disputes that resulted from the implementation of the National Water Initiative 2004 (NWI) and the Water Act 2007 (Cth) and culminated with the Australian Productivity Commission Report of 2018 and South Australian Murray-Darling Basin Royal Commission of 2019. Having looked at those examples, we turn to an assessment of the significant challenges that already, or will, face the allocation of water in California and South Australia and with which federalism, either on its own or through its cooperative use, will almost certainly be unable to cope.

A. United States Bureau of Reclamation–California Department of Water Resources Coordinated Operation Agreement 1986

The California State Water Project (SWP) is a water storage and delivery system planned, constructed, and operated by the California Department of Water Resources (DWR).²¹⁴ It delivers nearly 4.2 maf per year through water supply contractors, with the SWP supplying water to more than 27 million people in Northern California and irrigating about 750,000 acres of farmland, mainly in the San Joaquin Valley.²¹⁵ The overarching purpose of the SWP is to balance the needs of water delivery and environmental protection. It does this through ensuring four primary benefits: flood control, power generation, recreation, and the preservation of fish and wildlife habitat.

To achieve its environmental objectives, the SWP was designed to work in cooperation with Reclamation's Central Valley Project (CVP).²¹⁶ The CVP, a federal water project owned and operated by Reclamation, covers about 400 miles in California and draws from two large river basins: the Sacramento and the San Joaquin.²¹⁷ Comprising extensive water storage and conveyance infrastructure, the CVP delivers more than seven maf of water to users who have contracts with

²¹⁴ See generally Dennis Silverman, *California Water Projects Feeding Southern California*, ENERGY BLOG (Apr. 28, 2015), <https://sites.uci.edu/energyobserver/2015/04/28/california-water-projects-feeding-southern-california/> [<https://perma.cc/CGC5-3764>].

²¹⁵ *State Water Project*, CAL. DEP'T WATER RESOURCES, <https://water.ca.gov/Programs/State-Water-Project> [<https://perma.cc/EQ9X-JX3N>] (last visited Mar. 20, 2020).

²¹⁶ *Id.*

²¹⁷ *Id.*

Reclamation to support irrigated agriculture, municipalities, and fish and wildlife needs in California. About seventy-five percent of CVP water is used for agricultural irrigation, including seven of California's top ten agricultural counties. Contractors receive varying levels of priority for water deliveries based on several factors, including hydrology, water rights, prior agreements with Reclamation, and regulatory requirements.²¹⁸

Because both the SWP and the CVP predated major federal natural resources and environmental protection laws, and in order to coordinate activities between the federal and state governments, in 1986 the DWR and Reclamation signed the Coordinated Operation Agreement (COA)²¹⁹ to define how the two water projects would meet water quality and environmental flow obligations. While the COA called for periodic review to provide updates in response to changed conditions, no such reviews took place during the first thirty-two years of operation. By 2018, this failure had become a significant intergovernmental conflict between the DWR and Reclamation, reaching to the very highest level of government—President Trump threatened to sue California over control of the water to avoid full environmental review of new projects as required by the COA.²²⁰ As such, after completing a joint review process between 2016 and 2018, in December 2018 the DWR and Reclamation concluded agreements amending and adding to the COA,²²¹ so as to (1) establish water quality

²¹⁸ CHARLES V. STERN & PERVAZE A. SHEIKH, CONGR. RESEARCH SERV., R45342, CENTRAL VALLEY PROJECT: ISSUES AND LEGISLATION (2019), <https://fas.org/sgp/crs/misc/R45342.pdf> [<https://perma.cc/JVF7-KGA3>]. See also Lawrence B. Lee, *California Water Politics: Opposition to the CVP, 1944–1980*, 54 AGRIC. HIST. 402 (1980); Zachary P. Sugg, *An Equity Autopsy: Exploring the Role of Water Rights in Water Allocations and Impacts for the Central Valley Project during the 2012–2016 California Drought*, 7 RESOURCES 12 (2018).

²¹⁹ AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE DEPARTMENT OF WATER RESOURCES OF THE STATE OF CALIFORNIA FOR COORDINATED OPERATION OF THE CENTRAL VALLEY PROJECT AND THE STATE WATER PROJECT (1986), https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/petitioners_exhibit/glenn/gcid_1.pdf [<https://perma.cc/E7X3-RPZX>].

²²⁰ See *California Water Wars Would Get Crazy Complicated if Trump Administration Dives In*, SACRAMENTO BEE (Aug. 31, 2018, 8:30 AM), <https://www.sacbee.com/opinion/editorials/article217621920.html> [<https://perma.cc/5RDA-HUXY>]; *Water in California*, ECONOMIST (Nov. 17, 2018), <https://www.economist.com/united-states/2018/11/17/water-in-california> [<https://perma.cc/AJP3-49JT>]; Karla Nemeth, *What New Water Deals Mean and What Work Is Left to Be Done*, MODESTO BEE (Jan. 2, 2019, 12:39 PM), <https://www.modbee.com/opinion/article223834720.html> [<https://perma.cc/K6V3-PLD6>].

²²¹ Press Release, U.S. Bureau of Reclamation and California Department of Water Resources, *Agreement Between U.S. Bureau of Reclamation and California Department of*

regulations and tighten environmental restrictions; (2) formalize the cost-sharing formula for projects designed to meet joint responsibilities under the Endangered Species Act; and (3) move forward with a Sacramento–San Joaquin River Delta conveyance project, known as California WaterFix, with Reclamation and CWP Project contractors determining how to account for and allocate the benefits and costs of WaterFix if the project went forward (this objective has since been abandoned²²²).²²³

While the 2018 resolution was an admirable and much-needed de-escalation of what had become a protracted and heated inability to cooperate, in a press release announcing the outcome, the parties wrote, “Today the United States Bureau of Reclamation and the California Department of Water Resources announced a series of agreements to resolve water conflicts that have vexed the State for decades.”²²⁴ While “reaffirm[ing] the collaborative partnership between the Federal and State governments to develop long-term solutions to California’s major water problems,”²²⁵ this can hardly be considered a successful means of managing a complex and integrated resource. Instead, it is merely a stopgap solution which attempts to work within a flawed, fragmented system for managing that resource.

B. National Water Initiative 2004 and the Water Act 2007 (Cth)

The complicated history culminating in the adoption of the NWI in 2004 and the Water Act 2007 (Cth), the establishment of the MDBA, and the implementation and management of the MDBP, demonstrates the controversial nature of basin regulation since well before the Federation of Australia. Money and politics constantly played a role in this process, threatening to end cooperation at every stage.²²⁶ The interests of New South Wales, Queensland, and Victoria, the upper river states, have often been pitted against those of the lower river state,

Water Resources Supported by Public Water Agencies (Dec. 12, 2018), <https://wwd.ca.gov/wp-content/uploads/2018/12/VA-Joint-Contractor-Press-Release.pdf> [<https://perma.cc/3U82-9S7D>].

²²² *The California WaterFix Project*, NAT. RESOURCES DEF. COUNS. (May 13, 2019), <https://www.nrdc.org/court-battles/waterfix> [<https://perma.cc/4UNC-E3SU>].

²²³ *State Water Project*, *supra* note 215.

²²⁴ Press Release, U.S. Bureau of Reclamation and California Department of Water Resources, *supra* note 221.

²²⁵ *Id.*

²²⁶ GUEST, *supra* note 112, at 221.

South Australia, and, just as often, against each other.²²⁷ While South Australia was an early proponent of a coordinated effort to manage the rivers, in constitutional terms this meant referring the power to regulate the water to the Commonwealth, on the assumption that coordination was the only way to resolve the problem of the overuse of water in the upper river, where agriculture was firmly established. If the lower river was to be allowed to flow at a sustainable level and to provide water for production at the lower end, it would require agreement and coordinated regulation. The pursuit of self-interest by the states, however, has been a constant obstacle that the federal system has been unable to navigate.

In the way that a problem identified early, and neglected, becomes a major crisis in time, the current position of the Murray-Darling system is the child of this struggle predating the birth of Australian federation. As we have seen, the century of negotiation and renegotiation between the Commonwealth and the states²²⁸ resulted in the enactment of the Water Act 2007 (Cth) and the establishment of the MDBA as the body responsible for attempting an integrated management of the basin through the development of the MDBP.²²⁹ Yet failure to cooperate even in the context of supposed cooperation resulted in conflict, as identified by two recent reports concerning the Murray-Darling system. In late 2018, the Australian Productivity Commission issued a damning assessment of the legal framework upon which the Murray-Darling's management is based,²³⁰ while in early 2019 the South Australian Murray-Darling Basin Royal Commission produced a report that, while seemingly complimentary about the nature of cooperative federalism in basin management, nonetheless found significant difficulties with the operation of that regime.²³¹ Both diagnosed the problem as one of unclear and impractical division of powers among the various stakeholder bodies in the management of the Murray-Darling Basin.

Finding "serious deficiencies in the areas of role clarity [and] conflicting functions" between the various responsible bodies,²³² the Productivity Commission concluded that whereas the MDBA was

²²⁷ See ROYAL COMMISSION REPORT, *supra* note 196, at 13–14; JANE DOOLAN & JOHN MADDEN, PRODUCTIVITY COMMISSION, AUSTRALIAN GOVERNMENT, MURRAY-DARLING BASIN PLAN: FIVE-YEAR ASSESSMENT, PRODUCTIVITY COMMISSION INQUIRY REPORT (2018) [hereinafter PRODUCTIVITY COMMISSION REPORT].

²²⁸ See generally ROYAL COMMISSION REPORT, *supra* note 196, at 102–17.

²²⁹ *Water Act 2007* (Cth).

²³⁰ PRODUCTIVITY COMMISSION REPORT, *supra* note 227.

²³¹ ROYAL COMMISSION REPORT, *supra* note 196, at 117.

²³² PRODUCTIVITY COMMISSION REPORT, *supra* note 227, at 356.

supposed to drive the implementation of a sustainable plan for the river, the states were ultimately the responsible mechanisms for the necessary changes.²³³ In other words, the locus of duty fails to coincide with the locus of power. And not only is the MDBA unequipped to implement the plan but also its mandate is riddled with conflicts. The Productivity Commission concluded skeptically: the MDBA is simultaneously tasked to assist the states in the implementation of the plan (however impotently) and to monitor and report that progress. As one submission to the Productivity Commission put it, the authority “marks its own homework.”²³⁴

In early 2019, the South Australian Royal Commission identified the problem with management of the Murray-Darling as the practice and execution of the system rather than in its design. While judging the Water Act 2007 (Cth) “an excellent example of the progress that co-operative Federalism in the Australian context can achieve” and a “symphony of co-operative Federalism,” the problem was not the structure of the system itself, but the fact that the system could not achieve its purpose because it was “drowned out” by “a cacophony of short-sighted, vested self-interests.”²³⁵ The Royal Commission found that the system governing the rivers was not being correctly honored by the parties responsible for its operation—the states.²³⁶ Some states, New South Wales and Victoria in particular, have sought quite recently to “withdraw” from the agreement governing the rivers.²³⁷ This is driven by a distaste among these larger states to share control over the resource with South Australia, since sharing control would necessarily diminish their dominant position as the larger economies and as states at the upper end of the river. The aim of cooperative federalism was let down by uncooperative state parties.²³⁸ This, the Royal Commission has characterized as an “impediment” to achieving the objectives of the Water Act 2007 (Cth) and its associated plan for the rivers.²³⁹ And this creates significantly negative consequences for stakeholders, who are frustrated by the opacity of the MDBA and their inability to obtain information from it.²⁴⁰

²³³ *Id.* at 349.

²³⁴ *Id.* at 351.

²³⁵ ROYAL COMMISSION REPORT, *supra* note 196, at 117.

²³⁶ *Id.* at 49 and 112–13.

²³⁷ *Id.* at 112–13.

²³⁸ *Id.* at 49.

²³⁹ *Id.*

²⁴⁰ PRODUCTIVITY COMMISSION REPORT, *supra* note 227, at 353.

Yet, while the South Australian Royal Commission shared the alarm of the Productivity Commission in relation to the current state of management, its diagnosis differed: oddly, it concluded that the system must be preserved and restored to pursue its proper purpose.²⁴¹ The Royal Commission considered agents, who shared competing and unwilling interests, to have failed efforts at cooperative federalism.²⁴² The Productivity Commission, however, went further, concluding that the system itself was flawed.²⁴³ To the extent that the Royal Commission recognized the systemic problem, the commissioner appeared to be resigned to the fact that it was an inevitable consequence of the constitutional order:

Because of our Federal constitutional distribution of legislative powers, for better or for worse we have set out to render the project of rehabilitating the Basin's water resources enforceable and thereby effective, by a combination of intergovernmental agreements, Commonwealth external affairs powers and the tightly controlled referral of State powers to the Commonwealth — along with a welter of standing arrangements for inter-jurisdictional liaison and decision-making. In the absence of utterly unrealistic change to our Commonwealth *Constitution* by referendum, this very Australian framework of governance will remain, *faute de mieux*. The cheerful term for it is 'co-operative federalism'. A grimmer view would see it as a cockpit for interstate rivalrous self-interests.²⁴⁴

And the Productivity Commission was clearer, calling for structural changes:

In the absence of structural reform, in 2024 the MDBA will be responsible for deciding to reconcile the effectiveness of supply measures in achieving equivalent environmental outcomes Given the MDBA's role advising governments on water resource management and the water market, and as operator of the River Murray, over the longer term it will be a judge of its own performance in this regard.

If Basin Governments do not commit to and progress structural reform, the credibility of the MDBA (as both regulator and agent of governments) will be extremely compromised, and the likelihood of successful implementation significantly diminished Structural separation should begin as soon as possible, and should be completed by 2021.²⁴⁵

²⁴¹ See ROYAL COMMISSION REPORT, *supra* note 196, at 117–18.

²⁴² *Id.* at 49.

²⁴³ PRODUCTIVITY COMMISSION REPORT, *supra* note 227, at 358.

²⁴⁴ ROYAL COMMISSION REPORT, *supra* note 196, at 38.

²⁴⁵ PRODUCTIVITY COMMISSION REPORT, *supra* note 227, at 364.

As is the case with the federal-state cooperation in California and the Colorado Basin, it is not hard to see that there is a fundamental structural problem in the constitutional arrangement for water regulation in the Murray-Darling Basin. The solution, in the form of the Water Act 2007 (Cth) and the establishment of a national body, the MDBA, stumbled on the very obstacles it sought to clear. As the Productivity Commission makes abundantly clear, the primary cause of failure has been a responsible body riddled with conflict. Charged with the implementation and regulation of the MDBP, the MDBA became the marker of its own homework.²⁴⁶ With bitter irony, the Productivity Commission concluded that the MDBA, instead of providing a solution to state self-interest, has become focused on the pursuit of its own self-interests.²⁴⁷

An admirable goal, the experiences in both California and South Australia illustrate how cooperative federalism remains an unlikely source of comprehensive and lasting solutions when pursued by a federal government and states acting primarily—and by their very nature—through self-interest. Two comments, both made by South Australian politicians, neatly summarize the fragility of cooperative federalism. In one, the legislator, commenting on whether upstream state politicians in New South Wales and Victoria would support a project with benefits only for South Australia, suggested that to do so would “forget all about the cost to their own taxpayers [who], out of the goodness of their heart, do something for the benefit of South Australia. I think that is asking a little too much of anyone’s rational intelligence.”²⁴⁸ In the second, almost forty years later, another legislator said that

[e]very state bats for itself. Politics ensures that they do that. You can imagine what would happen if they did not . . . [A]ny of us who attends a national forum and is asked to vote on a water issue will vote for South Australia every time, otherwise we will not stay in this place.²⁴⁹

The failure of cooperative federalism follows the incompatibility of federal and state interests. This sad reality has been demonstrated for

²⁴⁶ *Id.* at 351; ROYAL COMMISSION REPORT, *supra* note 196, at 74, 698.

²⁴⁷ See *Cash Splash*, ABC FOUR CORNERS (July 8, 2019, 8:31 PM), <https://www.abc.net.au/4corners/cash-splash/11289412> [<https://perma.cc/RDR3-NJVV>] (describing the dispute, which continues, unabated, to rage).

²⁴⁸ GUEST, *supra* note 112, at ix (quoting South Australia, *Parliamentary Debates*, House of Assembly, 24 Aug. 1971, 1,019).

²⁴⁹ *Id.* at ix (quoting South Australia, *Parliamentary Debates*, House of Assembly, 14 Oct. 2008, 369–71).

over a century, both in Australia and in the southwestern United States, and is unlikely to change in the face of those challenges which already exist, and which are emerging in both jurisdictions.

IV

EXISTING AND EMERGING CHALLENGES

We could have chosen any number of contemporary challenges facing water management in California and South Australia to illustrate our thesis.²⁵⁰ Here, though, we outline only four, which seem most acute today and for which federalism seems most unable to provide a solution: (1) overallocation and environmental or ecological flows of water; (2) First Nations/Indigenous cultural flows of water; (3) international obligations concerning water; and (4) the consequences of climate change.

A. Overallocation and Overuse

Water, already in scarce supply in both California and South Australia,²⁵¹ is both overallocated and overused. The Water Act 2007 (Cth) provides that

there is an overallocation . . . if, with full development of water access rights in relation to the water resources of the area, the total volume of water able to be extracted by the holders of water access rights at a given time exceeds the environmentally sustainable level of take for those water resources [and that] there is an overuse . . . if the total volume of water actually taken for consumptive use from the water resources of the area at a given time exceeds the environmentally sustainable level of take for those water resources.²⁵²

As we have seen, the states in both countries hold more significant power to establish water resources law so as to allocate private power

²⁵⁰ See, e.g., Brendan Boepple, *The Colorado River Basin: An Overview by the State of the Rockies Project 2011–12 Research Team*, in THE 2012 COLORADO COLLEGE STATE OF THE ROCKIES REPORT CARD: THE COLORADO RIVER BASIN: AGENDA FOR USE, RESTORATION, AND SUSTAINABILITY FOR THE NEXT GENERATION 24 (2012); CADILLAC DESERT, *supra* note 146; LOS ANGELES: CITY OF THE FUTURE?, *supra* note 146; *Water & Power: A California Heist*, *supra* note 146; *Parched*, *supra* note 146.

²⁵¹ See OWEN, *supra* note 145, at 230–31 (describing levels of extreme drought in the Colorado system); Matt Coughlan, *Murray Darling Basin Drought Officially Worst on Record*, INDAILY (July 19, 2019), <https://indaily.com.au/news/national/2019/07/19/murray-darling-basin-drought-officially-worst-on-record/> [https://perma.cc/3UAQ-W2CY] (describing levels of extreme drought in the Murray-Darling system).

²⁵² See *Water Act 2007* (Cth) § 4.

over water—proprietary interests to private holders with respect to water use.

Both California²⁵³ and South Australia²⁵⁴—as is the case with every state in both countries—have established vast, complex systems of water resources law and proprietary entitlements in water. Those systems typically establish a system of prioritizing the allocation of water among the various types of proprietary interests in water rights.²⁵⁵ The water resources law of California, for instance, establishes a complex system of priority rules for allocating water supply.²⁵⁶ In Australia, while “all licensed [South Australian] users have high security water rights . . . NSW, Victoria and Queensland . . . prioritiz[e] the distribution of water between high and low security rights.”²⁵⁷ And forced to choose in a competition of interests for the right to use water, the states tend aggressively to pursue economic objectives, often at the expense of the riparian ecosystem. As such, in both countries it is the states that are primarily responsible for the overallocation and overuse of the scarce resource.

Indeed, conflicts over consumptive allocation have reached crisis point. In both the Colorado and the Murray-Darling Basins, water use is already both overallocated and overused in terms of total resource needs.²⁵⁸ In the Colorado Basin, the U.S. Bureau of Reclamation predicts that by 2060, the median expected annual water deficit will be more than three maf.²⁵⁹ Looking ahead, “[e]ven the best case is lousy, and the worst case—minimum supply, maximum consumption—almost doesn’t bear thinking about. If everyone used all the water they have a legal right to use, there would be much less than no water

²⁵³ See SLATER 2, *supra* note 44.

²⁵⁴ See Stoeckel, Webb & Green, *supra* note 44, at 83–220; *Natural Resources Management Act 2004* (SA) (Austl.).

²⁵⁵ See, e.g., STATE OF THE ROCKIES PROJECT 2011–12 RESEARCH TEAM, *supra* note 156.

²⁵⁶ SLATER 1, *supra* note 65, § 3.15; SLATER 2, *supra* note 44, § 13.14.

²⁵⁷ PRODUCTIVITY COMMISSION, WATER RIGHTS ARRANGEMENTS IN AUSTRALIA AND OVERSEAS: ANNEX E SOUTH AUSTRALIA 44 (2003). For an example of the priority rules that exist in New South Wales, Victoria, and Queensland, see Michael McKenzie, *Water Rights in NSW: Properly Property?*, 31 SYDNEY L. REV. 443 (2009).

²⁵⁸ COLORADO RIVER BASIN WATER STUDY, *supra* note 144, at 4, n.5. These needs include “water allocations and deliveries for municipal, industrial, and agricultural use; hydroelectric power generation; recreation; fish, wildlife, and their habitats . . . ; water quality including salinity; flow- and water-dependent ecological systems; and flood control.” *Id.* See also Stoeckel, *supra* note 126, at 6.

²⁵⁹ COLORADO RIVER BASIN WATER STUDY, *supra* note 144, at 9.

left.”²⁶⁰ It has long been known that the deficit between natural flow and allocated water use is a significant problem in the Murray-Darling Basin.²⁶¹ Disputes over allocation can lead to significant conflict, as demonstrated by the dispute concerning the COA in California and a recent \$750 million class action suit brought by Murray-Darling irrigators for damages caused by loss of water pursuant to an allocation.²⁶²

In all of this consumptive use, two matters tend to go unnoticed: the protection of the environment and the nexus between water use and land use planning and management. Given the nature of federalism in a system strained and stretched by overallocation and overuse, in which at least one of the governmental actors responsible for addressing that use tends to side with economic rather than environmental outcomes, two related questions arise: (1) is it possible to protect a volume of water that is left “in-stream” to sustain the ecological health of the watercourse,²⁶³ and (2) how can the nexus of land use and water supply be dealt with in a coordinated way? We briefly consider each of these questions.

1. Ecological Flows

Obviously, in addition to conflict over consumptive uses, there is another set of conflicts between competing objectives: the first is that between “instream use[s]” and traditional extractive consumptive uses; the second is between “instream values” and “efficiency.”²⁶⁴ In American law, instream uses or values are typically protected by some form of instream flow rights. In Australian law, instream values are protected by environmental water. An instream flow right or environmental water

is like a water right that belongs to the river itself The idea is to treat fish, other stream-dependent animals, and functioning wetlands as “beneficial uses,” by assigning to some of the water they depend

²⁶⁰ OWEN, *supra* note 145, at 228.

²⁶¹ DEP’T OF WATER RES. VICTORIA, WATER LAW REVIEW, REPORT NO. 1 AT 20 (1986); GUEST, *supra* note 112, at 26–35, 206–07.

²⁶² Kerry Brewster, *Murray-Darling Irrigators File Class Action Seeking \$750m from Basin Authority*, GUARDIAN (May 14, 2019, 2:00 PM), <https://www.theguardian.com/australia-news/2019/may/14/murray-darling-irrigators-file-class-action-seeking-750m-from-basin-authority> [<https://perma.cc/2QVH-Z2ME>].

²⁶³ See Boepple, *supra* note 250.

²⁶⁴ See generally GOTTLIEB, *supra* note 3.

on its own place in a river's priority list. [They are] limited in scope [and typically, although not always] have very junior priority²⁶⁵

Similarly, Australian law distinguishes two types of environmental water, which

may be water intentionally left in a river for the environment, or water that is remaining after consumptive needs have been met (often referred to as rules-based environmental water), or water that is released (generally from dams) into the river to achieve environmental outcomes (entitlement-based environmental water). Often, rules-based environmental water is achieved through limiting the number, volume and timing of extractions from a river; and entitlement-based environmental water tends to occur in regulated systems where a large, public in-stream dam captures the majority of the river flow and water is specifically set aside for the environment. For this reason, both diversion or extraction limits, as well as the provision of environmental water, are critical in achieving environmental objectives. Similarly, all water planning has ramifications for the environment because the permitted resource use for consumptive purposes under those plans directly affects the amount of water remaining for the environment.²⁶⁶

Put another way, while instream flow or environmental water rights typically lose out to higher value consumptive priorities in a given watercourse, "their existence, even as theoretical constructs, beneficially enlarges the legal conception of what a river is for."²⁶⁷ Here we refer to the American instream flow right and the Australian environmental water right as "ecological flows."

Ecological flows are but one element of the larger issues of allocating and using an already overallocated and overused resource, according to some wider set of priorities. These priorities exist between individual holders of proprietary interests in water, and among competing types of use for that water, either consumptive or instream. But as with allocation generally, the same question arises: which governmental level can deal with managing the complexities of allocation in an integrated way? Or put another way, which government is charged with ensuring the environmental health of interstate rivers like the Colorado and the Murray-Darling system? The answer, of course, is far from clear; again, the federal fragmentation of control over water plays its perverse, tyrannical role.

²⁶⁵ OWEN, *supra* note 145.

²⁶⁶ Amy Hankinson, *Environmental Water and Protection*, in AUSTRALIAN WATER LAW 479–80 (Kate Stoeckel et al. eds., 2012).

²⁶⁷ OWEN, *supra* note 145, at 92. *See also* Huffaker et al., *supra* note 66.

The power of the United States to deal with ecological flows seems limited to those powers which it has to deal with water generally, particularly the Commerce Clause in Article I, Section 8. Congress has relied upon this power to enact every piece of environmental legislation since 1970,²⁶⁸ including the Endangered Species Act, and the centerpiece of that action—the delegation of power to the U.S. Environmental Protection Agency to protect air in the Clean Air Act²⁶⁹ and water in the Clean Water Act.²⁷⁰ The same is true in Australia—the Commonwealth power to deal with environmental water and, indeed, with environmental protection itself, is limited to those powers that deal with water generally, as outlined in Part I, and especially the powers over external affairs, corporations, and just terms acquisition of property.²⁷¹ Yet, notwithstanding these federal powers, the environment often loses because state consumptive objectives often stifle federal power.

Paradoxically, while the states have greater power with respect to water, and thus with respect to the environmental health of water, the federal fragmentation of power often proves difficult to reconcile with the integrated unity of fragile riparian ecosystems.²⁷² Nonetheless, state power can be used to establish ecological flows. In California, for instance, ecological flows are established by two closely related doctrines: the public trust doctrine and the instream flow right. The former ensures that “instream values,” along with the state’s interests in recreation and navigation, are provided a continuing basis for protection.²⁷³ The public trust doctrine is defined with reference to federal and state “sovereign ownership of navigable waters, tidelands, and submerged lands of navigable waters.”²⁷⁴ The trust consists of two interrelated principles:

²⁶⁸ See Heddy Bolster, *The Commerce Clause Meets Environmental Protection: The Compensatory Tax Doctrine as a Defense of Potential Regional Carbon Dioxide Regulation*, 47 B.C. L. REV. 737 (2006); Christine A. Klein, *The Environmental Commerce Clause*, 27 HARV. ENVTL. L. REV. 1 (2003); Hoover, *supra* note 15.

²⁶⁹ Clean Air Act, 42 U.S.C.A. § 7401 (Westlaw through P.L. 116-93).

²⁷⁰ Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, 86 Stat. 816.

²⁷¹ See *Commonwealth v Tasmania* (1983) 158 CLR 1 (Austl.). See generally James Crawford, *The Constitution and the Environment*, 13 SYDNEY L. REV. 11 (1991).

²⁷² See WORSTER, *supra* note 17, at 290–95.

²⁷³ SLATER 1, *supra* note 65, § 1.06.

²⁷⁴ SLATER 2, *supra* note 44, § 13.01(1) (footnotes omitted). See also *id.* §§ 13.01(2)–13.02 (providing historical and legal background).

The people of the state have a common right to the use of natural resources and the ownership of these natural resources lies with the sovereign, or the state. State sovereign ownership includes the public's inviolable rights to certain natural resources which are held in trust by the state, to regulate and control the trust resources for the protection and preservation of trust uses on behalf of the beneficiaries of the trust, the people of California.²⁷⁵

The public trust doctrine—first applied to California's consumptive water use by the California Supreme Court in *National Audubon Society v. Superior Court*²⁷⁶—comprises trust resources and trust uses. Trust resources include tidelands, submerged lands, and navigable and non-navigable waters, while trust uses “traditionally are limited to the triad of commerce, navigation, and fisheries. Over time, the umbrella of trust uses has expanded to include recreational uses, including the right to hunt, swim, and fish.”²⁷⁷ As with any trust, the state as trustee holds the proprietary interest in such resources and the people of California hold the beneficial interest, with the former unable to alienate its interest.²⁷⁸

In addition to the public trust and instream flow rights, state law can also protect a third category of environmental interest, known as “instream values,” which, as

a matter of state policy . . . ha[ve] been incorporated into the water rights system. The principal vehicle to protect instream uses under the traditional regulatory system is the [California State Water Resources Control Board (SWRCB)]'s administration of appropriative water rights The Legislature has adopted statutory standards which the SWRCB and the Department of Fish and Game must consider to protect and preserve instream uses when allocating the state's water resources. In general, the issuance of appropriative water rights permits requires consideration of the public interest in instream uses before granting an application to appropriate.²⁷⁹

The appropriation process therefore “mandates the balancing of instream and consumptive uses” with instream uses “accorded equal value to offstream uses.”²⁸⁰ A detailed framework of priority rules

²⁷⁵ *Id.* § 13.01(1) (footnotes omitted).

²⁷⁶ *Nat'l Audubon Soc'y v. Superior Court*, 658 P.2d 709 (Cal. 1983).

²⁷⁷ SLATER 2, *supra* note 44, § 13.01(1) (footnotes omitted). *See also id.* §§ 13.05–13.07 and 13.10–13.12 (discussing trust resources and uses).

²⁷⁸ *Id.* § 13.01.1 (footnotes omitted). *See also id.* §§ 13.03, 13.04, and 13.08 (discussing the acquisition, nature, and inalienability of the state's duties as trustee).

²⁷⁹ *Id.* § 13.13 (2017). *See also id.* §§ 13.13(1)–(4) (discussing the role of the SWRCB and the Department of Fish and Game).

²⁸⁰ *Id.* § 13.14(1)(a).

allows for the SWRCB and the Department of Fish and Game to undertake this balancing process,²⁸¹ with “neither domestic and municipal uses nor in-stream uses [able to] claim an absolute priority.”²⁸²

In Australia, ecological flows are protected as either Commonwealth or state environmental water. This is achieved either through policy²⁸³ or legislative instruments, such as the Water Act 2007 (Cth), “which sets a precedent for future management of other interstate shared water resources”²⁸⁴ and which requires a balance between the pursuit of economic objectives and the protection of the river environment, including a “return to environmentally sustainable levels of extraction for water resources that are overallocated or overused.”²⁸⁵ Unlike the United States, though, “[g]enerally, there are fewer legislative requirements for environmental water management at a state level.”²⁸⁶ Nonetheless, every state employs some form of environmental water regime; most through rules-based environmental water, although Victoria, New South Wales, and Tasmania also provide for entitlement-based environmental water.²⁸⁷ It is unclear, though, “how existing rules-based environmental water will be recognized and managed once state water plans expire” pursuant to “the Commonwealth’s framework for water planning and management set out in the [MDBP].”²⁸⁸

South Australia, alone among all Australian States, takes a unique approach to ecological flows through the combined operation of the Natural Resources Management Act 2004 (SA) (NRMA) and the River Murray Act 2003. The former seeks to manage all natural resources in an integrated and sustainable way, while the latter attempts such management, but its operation is limited to the portion of the River Murray that flows through South Australia.²⁸⁹ The NRMA requires that

²⁸¹ For these priority rules see *id.* § 13.14.

²⁸² *Nat’l Audubon Soc’y v. Super. Ct.*, 658 P.2d 709, 729 n.30 (Cal. 1983). See also SLATER 2, *supra* note 44, § 13.14.

²⁸³ Amy Hankinson, *Environmental Water and Protection*, in AUSTRALIAN WATER LAW, *supra* note 44, at 457–530, 479.

²⁸⁴ *Id.* at 457–530, 480. On the operation of the Commonwealth environmental water regime, see *id.* at 480–82.

²⁸⁵ *Water Act 2007*, *supra* note 199, s 3(d)(i).

²⁸⁶ Hankinson, *supra* note 266, at 457–530, 479.

²⁸⁷ See *id.* at 457–530, 483–503 (discussing the operation of state and territory environmental water regimes).

²⁸⁸ *Id.* at 457–530, 479.

²⁸⁹ See *id.* at 457–530, 495 (discussing the operation of the Commonwealth environmental water regime). See generally *id.* at 494–96.

water allocation plans which, with respect to environmental water, must

- assess the quantity, quality, and timing of water needed by water-dependent ecosystems;
- assess whether water extraction will have a detrimental effect on the quantity or quality of available water;
- identify and assess methods for the management, conservation, and sustainable use of water; and
- set out principles so that “the rate of taking and use of the water is sustainable.”²⁹⁰

Within this framework, pursuant to the Natural Resources Management (General) Regulations 2005 (SA), promulgated under the NRMA, South Australia establishes an “environmental donations entitlement,” which is defined as

a water licence or a water allocation—

- (a) that relates to water in the River Murray . . . ; and
- (b) that is subject to conditions to the effect—
 - (i) that any water used under or in connection with the licence or water allocation may only be used for an environmental purpose in a manner accredited by the South Australian Murray Darling Basin Natural Resources Management Board; and
 - (ii) that the person who is the holder of the licence or water allocation is accredited by the South Australian Murray Darling Basin Natural Resources Management Board to receive, transfer, or use donations of water for environmental purposes recognised by the board for the purposes of these regulations.²⁹¹

And the Regulations further provide that:

- (2) The South Australian Murray Darling Basin Natural Resources Management Board must, in deciding whether to issue an accreditation for the purposes of a water licence or water allocation being recognised as an environmental donations entitlement, apply any criteria determined by the Minister.²⁹²

²⁹⁰ *Natural Resources Management Act 2004* (SA), ch 4 pt 2 div 2 s 76. See Hankinson, *supra* note 266, at 457–530, 495.

²⁹¹ *Natural Resources Management (General) Regulations 2005* (SA) pt 1 s 3(1).

²⁹² *Id.* at pt 1 s 3(2); see also Hankinson, *supra* note 266, at 457–530, 479 (footnotes omitted).

These entitlements may be held by “water authorities, state water departments, catchment bodies, . . . dedicated environmental managers,”²⁹³ and by a range of nongovernmental bodies.²⁹⁴

While it appears as though South Australia provides significant protection for ecological flows, rather, the law there demonstrates the very Byzantine complexity in water resources law produced by the fragmentation of power effected by federalism, and the necessity to overcome its consequences through the equally imperfect means afforded by cooperative or flexible federalism. The real issue with ecological flows, in other words, concerns not whether they can be established—they can—but who manages the health of an interstate river as a whole when there are many states and the federal government involved. The protection of the riparian ecosystem becomes difficult without significant coordination, which cannot be found in cooperative federalism, no matter how extensive its use or how good the intentions of the governments engaging in it. True, the two levels of government need to act together. But they do not do that. Instead, what we find is that coordinating such efforts often proves an insurmountable challenge. The resolution of the recent CVP/SWP dispute between the United States and California demonstrates how difficult that can be: cooperation was neither swift nor cheap. Similar difficulties arise with respect to land use planning.

2. Land Use Planning and Management

In both the United States and Australia, neither federal government has the constitutional power to directly deal with land use planning and management that occurs entirely within a state.²⁹⁵ Instead, as with ecological flows, the regulation of land use planning and management, the creation of land use planning policy, and the control of development fall within state powers. In the United States, this is part of the police power of the states;²⁹⁶ in Australia, this power resides within the

²⁹³ See Hankinson, *supra* note 266, at 457–530, 519.

²⁹⁴ See *id.* at 457–530, 522 (discussing the operation of the Commonwealth environmental water regime).

²⁹⁵ Of course, the federal government has power to deal with land use planning on federal land, but such land comprises a very small percentage of the total land area for which the nexus between water and land use management must be accounted. See KRISTINA ALEXANDER & ROSS W. GORTE, *FEDERAL LAND OWNERSHIP: CONSTITUTIONAL AUTHORITY AND THE HISTORY OF ACQUISITION, DISPOSAL, AND RETENTION 2* (2007) (on federal control of such land in the United States).

²⁹⁶ Norman Wengert, *Constitutional Principles Applied to Land Use Planning and Regulation: A Tentative Restatement*, 19 NAT. RESOURCES J. 1 (1979).

plenary power of the states with respect to natural resources.²⁹⁷ The federal governments, however, must rely upon those powers that allow them to act with respect to the environment generally.²⁹⁸ The Australian experience demonstrates the difficulties that can arise through this fragmentation of control. On the one hand, much of the decision-making on the majority of development proposals within each state in the Murray-Darling Basin is made by local government authorities pursuant to powers contained in state government planning legislation.²⁹⁹ On the other hand, the Commonwealth has, through the judicious use of the financial power in section 96 of the Australian Constitution, made grants to the states for specified purposes, thereby ensuring that the implementation of policies on affordable housing, urban design and improvement, and infrastructure are able to take place.³⁰⁰ To demonstrate the difficulties that can arise as a consequence of this fragmentation of power over the interaction of water use and land use planning, here we consider what has happened in the Murray-Darling system.

The already scarce water of the Murray-Darling Basin is put to a wide range of uses, which requires regulation to separate out incompatible uses and to determine a sufficient provision of land for conservation purposes, residential development, retention of arable land, and myriad other land uses. Yet, as is no doubt obvious given our assessment of the allocation of power through federalism, no single government holds the sole power to make such determinations. Unsurprisingly, relinquishing control over land use and development approval is not something basin states are willing to do. Thus, in Australia, while a requirement for the basin states to ensure that any

²⁹⁷ DANIEL CONNELL, WATER POLITICS IN THE MURRAY-DARLING BASIN 176–77 (2007).

²⁹⁸ See OECD, LAND-USE PLANNING SYSTEMS IN THE OECD: COUNTRY FACT SHEETS: THE GOVERNANCE OF LAND USE COUNTRY FACT SHEET UNITED STATES (2017), <https://www.oecd.org/regional/regional-policy/land-use-United-States.pdf> [https://perma.cc/7GT4-4GML] (for the position in the United States); Robert R. Wright, *Constitutional Rights and Land Use Planning: The New and the Old Reality*, 841 DUKE L.J. 841 (1977); see CONNELL, *supra* note 297 (for Australia).

²⁹⁹ On similar arrangements in the United States, see Lyn Loyd Creswell, *Federal Agency—Local Government Land Use Negotiations: Vulnerabilities of the Federal Bargaining Position*, 33 WASH. U. J. URB. & CONTEMP. L. 3 (1988); OECD, LAND-USE PLANNING SYSTEMS IN THE OECD: COUNTRY FACT SHEETS: THE GOVERNANCE OF LAND USE COUNTRY FACT SHEET (2017), <https://www.environment.gov.au/water/wetlands/publications/coorong-and-lakes-alexandrina-and-albert-ramsar-wetland-factsheet> [https://perma.cc/Q2XL-VBG6].

³⁰⁰ CONNELL, *supra* note, 297 at 176–77.

water management plans under state legislation that applies to the Murray-Darling Basin is consistent with the terms or requirements of the MDBA and the Water Act 2007 (Cth), no equivalent provision exists in state legislation concerning planning policy and development control decisions.³⁰¹ This makes coordination difficult, if not impossible. South Australia provides a representative example of the difficulties of coordination.

The long, winding journey of the River Murray ends in the South Australian town of Goolwa, discharging what waters remain in the river into the Southern Ocean. Obviously, both the volume and quality of water within the River Murray is affected by land uses within the upstream states.³⁰² Moreover, as is the case of Los Angeles and the Colorado River, South Australia depends heavily upon the River Murray for the supply of water to the state capital, Adelaide, and further afield to a number of regional towns and cities. High extraction levels in the upstream states and drought conditions put significant pressure not only on the urban areas within South Australia but also on vital natural resources such as the Coorong and Lakes Alexandrina and Albert Ramsar Wetlands.³⁰³ It is therefore not surprising that of the basin states, South Australia has enacted the most comprehensive legislation in the basin for the purposes of attempting to manage and control land use: the River Murray Act 2003 (SA) and the Development Act 1993 (SA). In addition to those enactments, South Australian legislation defines and identifies River Murray protection areas consisting of the River Murray Floodplain Area and the River Murray Tributaries Area within the state.³⁰⁴ Within those areas, South Australian state planning and development controls require that particular regard be given to the impacts of land use proposals on the water resources of the River Murray.

³⁰¹ See, e.g., Natural Resources Management Act, s 87 (2004) (SA).

³⁰² See Diagram 2.

³⁰³ The Coorong and Lakes Alexandrina and Albert wetland is one of Australia's most important wetland areas. Australia designated the site, covering approximately 140,500 ha in South Australia, as a Wetland of International Importance under the Ramsar Convention on Wetlands in 1985. See DEPARTMENT OF THE ENVIRONMENT, WATER, HERITAGE AND THE ARTS, COORONG AND LAKES ALEXANDRINA AND ALBERT RAMSAR WETLAND, FACT SHEET (2010), <https://www.environment.gov.au/water/wetlands/publications/coorong-and-lakes-alexandrina-and-albert-ramsar-wetland-factsheet> [https://perma.cc/CAP8-VA7K] (parts of the Coorong also form the Coorong National Park and Game Reserve).

³⁰⁴ River Murray Act 2003 s 4 (SA). The River Murray Protection Areas are defined in the *River Murray Regulations* Sched. 1 (2017) (SA).

The River Murray Act 2003 (SA) confers special protection on the River Murray within South Australia and establishes a coordinated system of water and land use management *within* the state, comprising six key components. First, the Murray itself is defined as the main stem of the River Murray and the natural resources of the river,³⁰⁵ with “natural resources” defined to include both cultural and natural heritage, and soil, minerals, and ecosystems associated with the Murray system.³⁰⁶

Second, the Act establishes four Objectives for a Healthy River Murray (ORM) that apply to the operation of the legislation.³⁰⁷ The ORM focus on the protection, restoration, and enhancement of the River Murray, “in recognition of its critical importance to the South Australian community and its unique value from environmental, economic, and social perspectives.”³⁰⁸ The four ORMs are (1) river health objectives; (2) environmental flow objectives; (3) water quality objectives; and (4) human dimension objectives. The Minister, the Environment Resources and Development Court, and other persons or bodies involved in the administration of the legislation are each required to act consistently with and seek to further the ORMs.³⁰⁹

Third, the River Murray Act 2003 (SA) places an emphasis on controlling and managing developments and activities to ensure that they “are undertaken in a way that provides the greatest benefit to, or protection of, the River Murray while at the same time providing for the economic, social and physical well-being of the community.”³¹⁰ The objects of the Act require mechanisms in place so that unacceptable development and activities likely to adversely affect the River Murray are prevented, regulated, or stopped.³¹¹ They require promoting principles of ecologically sustainable development,³¹² as defined in the Act,³¹³ and giving “proper weight to the significance and well-being of the River Murray when legislative plans and strategies are being developed or implemented.”³¹⁴ They also require recognition

³⁰⁵ River Murray Act 2003 s 3 (SA).

³⁰⁶ *Id.*

³⁰⁷ *Id.* s 7(1)–(6).

³⁰⁸ *Id.* s 6(1)(a).

³⁰⁹ *Id.* s 8.

³¹⁰ *Id.* s 6(1)(b).

³¹¹ *Id.* s 6(1)(c).

³¹² *Id.* s 6(1)(d).

³¹³ *Id.* s 6(2).

³¹⁴ *Id.* s 6(1)(e).

of Indigenous rights and interests,³¹⁵ and the rights generally of the broader community to a healthy Murray.³¹⁶

Fourth, the legislation provides for further coordination of the various South Australian legislative regimes, which play a role in the comprehensive management of land and water in the South Australian portion of the Murray system. It does this by defining a number of “related operational Acts,”³¹⁷ including the Development Act 1993 (SA), the Environment Protection Act 1993 (SA), the National Parks and Wildlife Act 1972 (SA), and the Natural Resources Management Act 2004 (SA). Thus, where proposals for policies or regulations arise pursuant to one of these related operational acts, or when an application for a statutory authorization under one of those acts requires referral to the Minister for consideration,³¹⁸ the Minister must take into account and seek to further the ORMs and objectives of the River Murray Act 2003 (SA).³¹⁹ In addition to that coordination, in the case of a statutory instrument, the Minister must take into account the terms or requirements of the MDBA and any resolution of its Ministerial Council, as well as any relevant provision of the basin plan under the Water Act 2007 (Cth).³²⁰

Fifth, when considering an application for a statutory authorization pursuant to the River Murray Act 2003 (SA), the Minister must take account of a range of defined factors, including the following: (1) the extent to which the proposed activity will affect the River Murray;³²¹ (2) the extent to which any similar activity is being undertaken, or is likely to be undertaken in the foreseeable future, in any other part of the Murray-Darling Basin;³²² and (3) the accumulative effects or anticipated accumulative effects of the activity on the River Murray.³²³

Finally, the River Murray Act 2003 (SA) also interacts with the state development control system pursuant to the Development Act 1993 (SA). As such, various forms of proposed development in the River Murray Floodplain Area³²⁴ or the River Murray Tributaries Area³²⁵

³¹⁵ *Id.* s 6(1)(f).

³¹⁶ *Id.* s 6(1)(g).

³¹⁷ *Id.* s 5(2).

³¹⁸ *Id.* s 22(2).

³¹⁹ *Id.* s 22(4)(a).

³²⁰ *Id.* s 22(4)(b).

³²¹ *Id.* s 22(4)(c)(i).

³²² *Id.* s 22(4)(c)(ii).

³²³ *Id.* s 22(4)(c)(ii).

³²⁴ Development Regulations 2008 (SA) sch 8 pt 2 para 19.

³²⁵ *Id.* at sch 8, pt 2, para 20.

must be referred to the Minister who, for the time being, administers the River Murray Act 2003 (SA).³²⁶ The Minister has a broad general power to either direct the planning authority to refuse consent for the development proposal or, if the planning authority determines that development plan consent is appropriate, to direct the planning authority to attach particular conditions specified by the Minister for planning consent.³²⁷ Importantly, on such a referral from the planning authority, the Minister responsible for the River Murray Act 2003 (SA) is to bear in mind the responsibility to act consistently with and seek to further the ORMs.³²⁸

The River Murray Act 2003 (SA), taken on its own, establishes important coordination in relation to water and land use planning and management in and around the River Murray to the extent that it flows within South Australia. It predated the Water Act 2007 (Cth), which establishes arrangements for protection of the whole Murray-Darling Basin and places restrictions on consumptive water use throughout the basin. And therein lies the problem. While South Australia has put in place specific laws that seek to control and manage land use planning and development in the River Murray protection areas *within* that state, each of those areas sits within the larger Murray-Darling Basin. As such, while the South Australian regime might provide for coordinated water and land management *within* the state, by virtue of section 109 of the constitution, it cannot address that management at the basin-wide level—that regime being subordinate to the Water Act 2007 (Cth) and the MDBP.

Thus, while many of the watercourses within upstream basin states feed into rivers and tributaries that flow into the Murray-Darling system, and while those riparian areas are heavily regulated under their own state land use planning and development laws, no coordination exists between the different state regulatory regimes, and the Commonwealth is unable to manage those regimes to the extent that they operate solely within a state. The only way that such coordination could be achieved is through more cooperative federalism; a transfer from each basin state and territory to the Commonwealth government of their planning and development control powers. History, of course,

³²⁶ The River Murray Floodplain Area and the River Murray Tributaries Area are both River Murray Protection Areas for the purposes of the River Murray Act 2003 (SA) and any other legislation, such as the Development Act 1993 (SA). Both areas are delineated in the River Murray Regulations 2017 (SA) sch 1 and s 4.

³²⁷ Development Regulations 2008 (SA) sch 8 pt 1 s 2(d)(iii).

³²⁸ These objectives are outlined in the River Murray Act 2003 s 7 (SA).

suggests that this is unlikely. And even if it was likely, cooperative federalism itself is an imperfect solution to the problems created by federalism.

None of this ought to surprise us. When control is fragmented between the federal and state governments, federalism simply cannot deal with the complex, integrated challenge posed by interstate watercourses. David Owen writes succinctly with respect to the Colorado River:

Among the many difficulties of truly dealing with over-allocation, once the compact states, the Department of the Interior, and Congress have reached the point where doing so is unavoidable, is that no one can say authoritatively how much water truly exists to be divided, beyond the very short term: it's not a fixed, unvarying amount.³²⁹

The federal history of the Colorado and Murray-Darling Basins is itself the history of an attempt to find a way to deal with the tyrannical federal fragmentation of power.³³⁰ That is unlikely to change, no matter the degree of cooperative or flexible federalism that can be achieved. Deverell and Sitton suggest that the problem of allocation in the Colorado River—and balancing consumptive uses with ecological flows—demands “bigger actions, on a statewide or even a federal scale, with regulatory or enforcement teeth.”³³¹ But when it comes to federalism and water, as with each of the challenges we identify in this part, the suggestion of bigger actions simply describes the problem; it hardly offers a solution. The same is true of Indigenous cultural flows, to which we now turn.

B. First Nations Cultural Flows

Water played a central role in the lives of First Nations or Indigenous peoples living in the Colorado and Murray-Darling Basins.³³² Long before European settlement, Indigenous peoples inhabited the lands around the Murray River.³³³ So too, in the southwestern United States, where the Paiute people practiced irrigation in harmony with local conditions, “watch[ing] how nature waters the grasses and bulbs, then follow[ing] suit.”³³⁴ In the American southwest, the pueblo societies of

³²⁹ OWEN, *supra* note 145, at 230.

³³⁰ See generally GUEST, *supra* note 112; OWEN, *supra* note 145, at 232–33.

³³¹ DEVERELL & SITTON, *supra* note 146, at 141.

³³² See generally VIRGINIA MARSHALL, *OVERTURNING AQUA NULLIUS: SECURING ABORIGINAL WATER RIGHTS* (2017).

³³³ GUEST, *supra* note 112, at 4.

³³⁴ WORSTER, *supra* note 17, at 32.

what is now Mexico—the Zuni, the Hopi, the Papago, and the Sonoran peoples³³⁵—used various forms of irrigated agriculture to water their crops,³³⁶ “demonstrat[ing] an intimate knowledge of the desert ecosystem, stream hydraulics, and agronomy. But theirs was not a science devoted to the technical conquest of nature; rather, it aimed more modestly at achieving a secure coexistence and a thrifty subsistence.”³³⁷ And before the Papago and Pima Indians, the Hohokam Indians practiced ambitious, large-scale irrigated agriculture.³³⁸

Chris Guest’s assessment of what happened with European settlement in Australia could be applied with equal force anywhere that Europeans sought new territory, including the United States: “European colonisation disrupted fundamentally this way of life,”³³⁹ treating water as *aqua nullius* and thus susceptible to the acquisition of sovereignty by colonizing European nations.³⁴⁰ Yet, notwithstanding this disruption, First Nations peoples in the United States and Australia continue to practice aspects of their way of life prior to such contact.³⁴¹ This, of course, in some cases requires flows of water where that way of life depended upon riparian contact. In the United States, “[b]oth water and land were sacred to nearly all Indian cultures. This was a belief that had survived and even grown stronger since the development of the [U.S.] reservation system”;³⁴² while in Australia “water holds cultural and spiritual significance for many Indigenous groups.”³⁴³ Thus,

³³⁵ For a map of First Nations American Southwest, see *American Indian Culture of the Southwest*, KHAN ACAD., <https://www.khanacademy.org/humanities/us-history/precontact-and-early-colonial-era/before-contact/a/southwest-indian-culture> [https://perma.cc/AM47-SYTD] (last visited Mar. 20, 2020).

³³⁶ WORSTER, *supra* note 17, at 32–36.

³³⁷ *Id.* at 34.

³³⁸ *Id.*

³³⁹ GUEST, *supra* note 112, at 4.

³⁴⁰ MARSHALL, *supra* note 332 (describing “*terra nullius*” as the doctrine of international law that treated colonial lands as lands belonging to no one; “*aqua nullius*” applies the same approach to water).

³⁴¹ See generally Peter Burdon et al., *Decolonising Indigenous Water ‘Rights’ in Australia: Flow, Difference, and the Limits of Law*, 5 SETTLER COLONIAL STUD. 334 (2015); Lorena Allam, *We Can Help Save the Murray-Darling, Indigenous Nations Say: Call for Government to Support First Nations to Acquire Water for Cultural Flows*, GUARDIAN (Feb. 2, 2019), https://www.theguardian.com/australia-news/2019/feb/03/we-can-help-save-the-murray-darling-indigenous-nations-say?CMP=Share_iOSApp_Other [https://perma.cc/ELB2-CXDV].

³⁴² GOTTLIEB, *supra* note 3, at 221.

³⁴³ Kate Stoeckel & Susanna Lawrence, *Water Planning and Management*, in AUSTRALIAN WATER LAW 34 (Kate Stoeckel et al. eds., 2012).

in Australia, the concept of “cultural flows” has emerged as a way of describing “water of a sufficient and adequate quantity and quality to improve the spiritual, cultural, environmental, social and economic conditions of those Indigenous nations”³⁴⁴ who traditionally reside throughout a river system.³⁴⁵ We adopt the same usage in this Article. Yet, as with every other dimension of the federal fragmentation of control over interstate water allocation, it is unclear which level of government has the power to deal with such flows.³⁴⁶

As concerns Aboriginal and Torres Strait Islander peoples, the Australian Constitution began life in expressly racist terms,³⁴⁷ an amendment in 1967,³⁴⁸ however, removed some of the worst provisions, at the same time removing power from the states to legislate with respect to “the people of any race . . . for whom it is deemed necessary to make special laws.”³⁴⁹ This, in conjunction with section 109 (the paramountcy clause) means that in the case of conflict between Commonwealth and state laws with respect to Aboriginal or Torres Strait Islander peoples, the former prevails. Similarly, in the United States, the Supreme Court has consistently interpreted the Commerce Clause (providing the federal government with the power to regulate commerce with the Indian tribes³⁵⁰); the treaty,³⁵¹ war,³⁵² foreign affairs,³⁵³ and property powers;³⁵⁴ and the plenary power doctrine³⁵⁵ as

³⁴⁴ Allam, *supra* note 341.

³⁴⁵ See ROYAL COMMISSION REPORT, *supra* note 196, at 493–94; Burdon et al., *supra* note 341.

³⁴⁶ See Allam, *supra* note 341.

³⁴⁷ See *Australian Constitution* s 51(xvi), s 127. Section 51(xvi) provided that the Commonwealth had power to legislate with respect to “the people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws,” while s 127 provided that “[i]n reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.” *Id.*

³⁴⁸ *Constitution Alteration (Aboriginals) 1967* (Cth). See Sarah Pritchard, *The ‘Race’ Power in Section 51(xxvi) of the Constitution*, 15 AUSTL. INDIGENOUS L. REV. 44 (2011).

³⁴⁹ Pritchard, *supra* note 348, at 44 (quoting *Australian Constitution* s 51(xvi)).

³⁵⁰ U.S. CONST. art. I, § 8, cl. 3.

³⁵¹ U.S. CONST. art. II, § 2, cl. 2.

³⁵² U.S. CONST. art. I, § 8, cl. 11–16.

³⁵³ U.S. CONST. art. II, § 2.

³⁵⁴ U.S. CONST. art. IV, § 3, cl. 2.

³⁵⁵ *Worcester v. Georgia*, 31 U.S. 515, 557–62 (1832). See also *United States v. Wheeler*, 435 U.S. 313 (1978).

conferring upon Congress and the President almost unlimited power over Indian tribes.³⁵⁶

But because the states retain their constitutional powers with respect to water law, it is unclear which level of government has the power to manage cultural flows, with attempts at cooperative or flexible federalism achieving limited success. It has long been known that the cooperative federalism that produced the 1922 Compact in the United States and the MDBP in Australia failed to understand the importance of cultural flows as central to the Indigenous relationship to land and water,³⁵⁷ and so largely ignored the significant interests of First Nations peoples.³⁵⁸

In the Colorado Basin, it seemed in the early twentieth century that cultural flows might be given priority over other appropriative consumptive rights. The United States Supreme Court's decision in *Winters v. United States*³⁵⁹ purported to give priority to Indian water rights which "arise on, border, traverse, underlie, or are encompassed within Indian reservations,"³⁶⁰ and Article VII of the 1922 Compact—the shortest of the eleven Articles—provides that "[n]othing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes."³⁶¹ Yet neither *Winters* nor Article VII gained any traction. In relation to the former, "[n]o one could say, would say, where or how far the *Winters* doctrine applied. And in that state of ambiguity the white appropriators had an uneasy but clear edge: they were already in possession."³⁶² Indeed, the 1963 decision of the Supreme Court in *Arizona v. California* narrowed the *Winters* doctrine to apply only to that water required by Indians for "practicably irrigable acreage."³⁶³ As to Article VII, the issue has become one of quantification of the Indian water entitlement; but, as Owen writes,

³⁵⁶ Nell Jessup Newton, *Federal Power over Indians: Its Sources, Scope, and Limitations*, 132 U. PA. L. REV. 195, 202 (1984); James A. Poore III, *The Constitution of the United States Applies to Indian Tribes*, 59 MONT. L. REV. 51, 55 (1998).

³⁵⁷ Burdon et al., *supra* note 341, at 334. *See also* STATE OF THE ROCKIES PROJECT 2011-12 RESEARCH TEAM, *supra* note 156.

³⁵⁸ *See* WORSTER, *supra* note 17 at 297-99; OWEN, *supra* note 145, at 70-72 (2017); GOTTLIEB, *supra* note 3, at 219-23, 227-28; GUEST, *supra* note 112, at 190-91.

³⁵⁹ *Winters v. United States*, 207 U.S. 564 (1908). *See also* Huffaker et al., *supra* note 66.

³⁶⁰ COHEN'S HANDBOOK OF FEDERAL INDIAN LAW § 19.03[2][a], at 1213 (Nell Jessup Newton ed. 2012).

³⁶¹ Colorado River Compact, COLO. REV. STAT. ANN. § 37-61-101 (West 2019).

³⁶² WORSTER, *supra* note 17, at 298 (footnote omitted).

³⁶³ *Arizona v. California*, 373 U.S. 546, 600 (1963). *See also* GOTTLIEB, *supra* note 3, at 219-20.

“not surprisingly, Indians have usually been more interested than non-Indians in quantifying Indian water rights.”³⁶⁴ Thus, while the federal government might have the absolute power to legislate, the status of Indian water rights generally, and cultural flows specifically, remains tenuous at best.

In the Murray-Darling Basin, the two major efforts at cooperative federalism prior to the MDBP—the River Murray Waters Agreement 1915 and the Murray-Darling Basin Agreement 1992³⁶⁵—made almost no provision either for Indigenous water rights or for cultural flows.³⁶⁶ And while disputes that arose over such water rights seemed to provide guidance as to how interstate management might provide for future recognition of such flows,³⁶⁷ unsurprisingly, little progress has been made with the implementation of a strategy for cultural flows within the NWI. Similarly, the Water Act 2007 (Cth) makes no explicit provision for these flows.³⁶⁸ Thus, unlike the United States, where power resides almost exclusively with the federal government, in Australia, paradoxically, given the seemingly strong power of the Commonwealth to legislate with respect to Aboriginal and Torres Strait Islander peoples, it is the states that have attempted to deal with cultural flows, albeit very imperfectly.³⁶⁹ The MDBP requires only that states consider cultural flows when making other allocation plans. And only a few states in fact recognize Indigenous water rights as part of their water resources law.³⁷⁰ New South Wales provides the widest amplitude of protection, with the Water Management Act 2000 (NSW) providing for specific-purpose licenses through “macro water sharing plans,” which apply to a number of catchments or water sources.³⁷¹ Such licenses may be issued for either commercial or cultural purposes, the latter of which can include hunting, fishing, recreation, cultural activities, and ceremonial activities.³⁷²

³⁶⁴ OWEN, *supra* note 145, at 72. See also GOTTLIEB, *supra* note 3, at 219–23, 227–28. On the *Winters* doctrine generally and quantification or measure of the right, see SLATER 2, *supra* note 44, § 15.12; MacDonnell et al., *supra* note 145, at 828.

³⁶⁵ Given full legal effect by the *Murray-Darling Basin Act 1993* (Cth).

³⁶⁶ See GUEST, *supra* note 112, 190–91.

³⁶⁷ *Id.*

³⁶⁸ See also Allam, *supra* note 341.

³⁶⁹ Diane Skapinker et al., *Evolution of Water Rights*, in AUSTRALIAN WATER LAW 11–30, 29 (Kate Stoeckel et al. eds., 2012); Stoeckel & Lawrence, *supra* note 343, at 34.

³⁷⁰ Skapinker et al., *supra* note 369, at 29; Allam, *supra* note 341.

³⁷¹ On how the system works, see NSW DEP’T OF PRIMARY INDUS., OFF. WATER, MACRO WATER SHARING PLANS – THE APPROACH FOR GROUNDWATER (2015).

³⁷² Skapinker et al., *supra* note 369, at 29–30 (footnotes omitted); Stoeckel & Lawrence, *supra* note 343, at 34.

The rights (either water rights or cultural flow rights) protected in Australian state law—and generally speaking, in American law too—if they can so be described, are weak. Cultural flows have been historically overlooked, and today are treated as a secondary aim to economic priorities.³⁷³ The South Australian Royal Commission Report put this in stark terms: “[T]he ‘elephant in the room’ for all Basin States — where will water for cultural flows come from, in a largely overallocated system?”³⁷⁴ The Royal Commission concluded that there must be “[a] stronger legal platform for the role of Aboriginal people in managing Basin water resources.”³⁷⁵ The very fact that it is the states who have acted in Australia, and in a piecemeal fashion at that, simply serves to highlight the problem—state action is fragmented action. And in the absence of state power to legislate, as in the United States, short of federal action the result is the same: limited, if any, protection for cultural flows. As such, neither one level of government nor both levels of government acting cooperatively can deal with the totality of cultural flows across the whole of the integrated systems found in the Colorado and Murray-Darling Basins.

C. International Obligations

One might, at first blush, assume that the management of water resources within one nation raises no international dimensions. Closer examination, however, shows that assumption to be false. The management of water by a single nation, notwithstanding the internal organization of that state, often involves international obligations³⁷⁶ that may arise in one or both of two ways. The United States illustrates the first and most obvious instance: geography. Unregulated, the Colorado River once reached the sea not in any part of the United States, but in Mexico (see Diagram 1).³⁷⁷ Thus, the mere fact that use by the upstream users of the Colorado River in the United States affects

³⁷³ See ROYAL COMMISSION REPORT, *supra* note 196, at 497.

³⁷⁴ *Id.* at 499.

³⁷⁵ *Id.*

³⁷⁶ See, e.g., Joseph Dellapenna & Joyeeta Gupta, *Toward Global Water Law*, 14 GLOBAL GOVERNANCE 437 (2008) (describing international water obligations); Salman M.A. Salman, *The Helsinki Rules, the UN Watercourses Convention and the Berlin Rules: Perspectives on International Water Law*, 23 WATER RES. DEV. 625 (2007) (describing international water obligations); Jamie Benidickson, *The Evolution of Canadian Water Law and Policy: Securing Safe and Sustainable Abundance*, 13 MCGILL INT’L J. SUSTAINABLE DEV. L. & POL’Y 59 (2017) (describing international water obligations); *Parched*, *supra* note 146.

³⁷⁷ See DEVERELL & SITTON, *supra* note 146.

the downstream user, Mexico, forces international considerations upon both the federal and state governments.³⁷⁸ Australia demonstrates the second way in which international considerations arise with respect to water resources entirely within one nation:

Australia is an island state with permanent sovereignty over its natural resources, including water. [D]espite this physical isolation, Australia is signatory to a number of international treaties and conventions that affect the domestic management of . . . water resources. In addition, Australia has subscribed to a range of international policy instruments which, although not legally binding, contain desirable objectives, targets and programs relevant to the management of Australia's resources.³⁷⁹

In other words, either geography, voluntarily entered international agreements or policy instruments, or the two together can establish international obligations.³⁸⁰

In Australia, these obligations include the Convention on Wetlands of International Importance (the Ramsar Convention),³⁸¹ the Convention for the Protection of the World Cultural and Natural Heritage (the World Heritage Convention),³⁸² the World Charter for Nature,³⁸³ Agenda 21,³⁸⁴ and those rules of customary international law relating to freshwater resources summarized in the Berlin Rules on Water Resources.³⁸⁵ In the case of the Colorado River, while the 1922 Compact failed to address a Mexican allocation, it did provide for the possibility of a future allocation "[i]f, as a matter of international comity, the United States . . . shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System."³⁸⁶ Mexico's entitlement was not expressly addressed until the conclusion of the 1944 Treaty for the Utilization of Waters of

³⁷⁸ See Boepple, *supra* note 250, at 27.

³⁷⁹ Stoeckel, *supra* note 126, at 1–10, 3–4.

³⁸⁰ On these treaties, conventions and principles generally see *id.* at 1–10, 4–5; Hankinson, *supra* note 266, at 457–530, 467–479.

³⁸¹ *Convention of Wetlands of International Importance Especially as Waterfowl Habitat*, Feb. 2, 1971, 996 U.N.T.S. 245.

³⁸² *Convention for the Protection of the World Cultural and Natural Heritage*, Nov. 23, 1972, 1037 U.N.T.S. 151.

³⁸³ G.A. Res. 35/7, Draft World Charter for Nature (Oct. 30, 1980).

³⁸⁴ *Agenda 21: Programme of Action for Sustainable Development; Rio Declaration on Environment and Development; Statement of Forest Principles: The Final Text of Agreements Negotiated by Governments at the United Nations Conference on Environment and Development (UNCED)*, 3–14 June 1992, Rio De Janeiro, Brazil (1993).

³⁸⁵ International Law Association, *The Berlin Rules on Water Resources* (2004).

³⁸⁶ 1922 Compact, Article III(c).

the Colorado and Tijuana Rivers and of the Rio Grande (1944 Treaty).³⁸⁷

But how, given the fragmenting nature of power under the federal structures of Australia and the United States, can these obligations be given full effect? The short answer is that full effect cannot be given to these obligations. We have outlined the respective constitutional powers of the federal and state governments in both jurisdictions; the difficulty arises when the specific obligations must be implemented, as a matter of law, in each nation. The constitutional powers of the states to establish water resources law means that it becomes necessary for the involvement of both the federal and state governments to meet the obligations undertaken by the federal government. That typically proves difficult, if not impossible.

In Australia, the Commonwealth government relied upon its constitutional powers with respect to external affairs and its consequent obligations under the Ramsar and World Heritage Conventions to enact the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) and to establish the NWI, which led to the enactment of the Water Act 2007 (Cth).³⁸⁸ The states, however, hold the power to deal with natural resources. As such, most international obligations must be managed by state governments and private landholders.³⁸⁹ This is hardly the optimal position with an integrated resource; indeed, the EPBC Act requires the Federal Environment Minister to develop a management plan for each Ramsar-listed wetland³⁹⁰ and at best “it has endeavoured to develop [these plans] in agreement with the relevant state.”³⁹¹

The United States is no different: while the 1944 Treaty supposedly settled Mexico’s allocation of Colorado River water, a formal protest was lodged by the government of Mexico. Mexico protested that it had been guaranteed “1.5 million acre-feet of water a year . . . of good quality, suitable for irrigation” but the states party to the 1922 Compact

³⁸⁷ Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Treaty Between the United States of America and Mexico, Mex.-U.S. Feb. 3-Nov. 14, 1944 59 Stat. 1219. *See also* Anabel Sánchez, *1944 Water Treaty Between Mexico and the United States: Present Situation and Future Potential*, 18 FRONTERA NORTE 125 (2006); GOTTLIEB, *supra* note 3, at 223–26.

³⁸⁸ GUEST, *supra* note 112, at 206.

³⁸⁹ EPBC Act, ss 326, 328.

³⁹⁰ *Id.*

³⁹¹ Hankinson, *supra* note 266, at 457, 469.

took the view that it was the federal government's responsibility to deal with the problem.³⁹²

As we have already seen, when power is fragmented among the states and the federal government, with internal decisions made by both, it becomes unclear which level can take action, with imperfect cooperative or flexible federalism as the only solution. That, of course, is no solution at all—and in the absence of a workable solution in the face of voluntarily assumed obligations, or those imposed by geography, what hope can there be in the face of the greatest international challenge of all: climate change?

D. Climate Change

Climate change is the international challenge facing water resources ne plus ultra. For that reason, while an assessment of ecological flows might encompass a consideration of anthropogenic climate change, we give it separate treatment. This is because its consequences for water resources have taken on their own importance, apart from treatment only as a matter of environmental protection.

In general terms, climate change is a “threat multiplier”³⁹³ and “a giant magnifying glass, making all our challenges more extreme”³⁹⁴: “[t]he relationship between climate-related risks and conflict is complex and often intersects with political, social, economic and demographic factors.”³⁹⁵ Climate change carries the potential, simultaneously, to raise sea levels, cause crop failure, exacerbate water scarcity, and force mass migration of people from rural to urban regions. The effects of climate change, in turn, result in political instability, terrorism, civil unrest, and war, both intra- and interstate.³⁹⁶ Indeed, while writing this Article, climate change produced extreme

³⁹² WORSTER, *supra* note 17, at 321.

³⁹³ *Climate Change Recognized as ‘Threat Multiplier’*, *UN Security Council Debates Its Impact on Peace*, UN NEWS (Jan. 25, 2019), <https://news.un.org/en/story/2019/01/1031322> [<https://perma.cc/SQH3-MJHU>].

³⁹⁴ *Thirsty Planet*, *ECONOMIST* 5, 6 (Mar. 2, 2019) (special report about water).

³⁹⁵ *Climate Change Recognized as ‘Threat Multiplier’*, *UN Security Council Debates Its Impact on Peace*, *supra* note 393 (quoting Rosemary DiCarlo, U.N. Under-Secretary-General for Political and Peacebuilding Affairs).

³⁹⁶ Sarah Kennedy, *Why Climate Change Is a ‘Threat Multiplier,’* *YALE CLIMATE CONNECTIONS* (Jun. 20, 2019), <https://www.yaleclimateconnections.org/2019/06/why-climate-change-is-a-threat-multiplier/> [<https://perma.cc/3K6U-Q77P>].

weather and widespread flooding in the midwestern United States.³⁹⁷ The world is becoming increasingly attuned to the possibility that major international conflicts may have their origins, at least partly, in climate change,³⁹⁸ and it may become a central issue in the U.S. 2020 Democratic presidential primaries,³⁹⁹ if not the general election itself.⁴⁰⁰ In short, climate change “is worse, much worse, than you think.”⁴⁰¹

The consequences of climate change are acute in the case of water: “climate change is water change,”⁴⁰² or put more harrowingly, “[i]f climate change is a shark, the water resources are the teeth.”⁴⁰³ Climate change affects the supply of freshwater in two significant ways. First, wet places will become wetter and dry places dryer, exacerbating the inequality that already exists between those nine countries that hold sixty percent of all freshwater supplies and the rest of the world.⁴⁰⁴ And, second, as we are now seeing in the U.S. Midwest, extreme weather is becoming more frequent, affecting more people.⁴⁰⁵ Thus, rather than a steady supply, water will come in major rainfalls causing widespread flooding making the water and land unavailable for use, interspersed with long dry periods during which times water will be increasingly scarce.⁴⁰⁶

For California, the ability to draw water from the SWP for urban uses in the south, especially in Los Angeles, will be diminished by

³⁹⁷ *Floods and Storms Are Altering American Attitudes to Climate Change*, ECONOMIST (May 30, 2019), <https://www.economist.com/united-states/2019/05/30/floods-and-storms-are-altering-american-attitudes-to-climate-change> [<https://perma.cc/7A6H-X9M3>].

³⁹⁸ *How Climate Change Can Fuel Wars*, ECONOMIST (May 23, 2019), <https://www.economist.com/international/2019/05/23/how-climate-change-can-fuel-wars> [<https://perma.cc/MU2M-X334>].

³⁹⁹ One of the issues attracting attention in the Democratic Party is the “Green New Deal.” See, e.g., *What Is a Green New Deal?*, SIERRA CLUB, <https://www.sierraclub.org/trade/what-green-new-deal> [<https://perma.cc/6GSM-CKDT>] (last visited Mar. 20, 2020).

⁴⁰⁰ *Climate Change Will Be a Big Issue in the Democratic Contest*, ECONOMIST (June 7, 2019), <https://www.economist.com/democracy-in-america/2019/06/07/climate-change-will-be-a-big-issue-in-the-democratic-contest> [<https://perma.cc/4P6U-PVCT>].

⁴⁰¹ DAVID WALLACE-WELLS, *THE UNINHABITABLE EARTH: A STORY OF THE FUTURE* 3 (2019).

⁴⁰² OWEN, *supra* note 145, at 7.

⁴⁰³ WALLACE-WELLS, *supra* note 401, at 93 (quoting Peter Gleick, Pacific Institute).

⁴⁰⁴ FOOD & AGRIC. ORG. OF THE U.N., *REVIEW OF WORLD WATER RESOURCES BY COUNTRY*, Water Reports 23, 21 (2003).

⁴⁰⁵ 2014: CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT 418–40 (Jerry M. Melillo, Terese (T.C.) Richmond & Gary W. Yohe eds., 2014).

⁴⁰⁶ *Thirsty Planet*, *supra* note 394, at 5, 6–7.

climate change, making the Colorado River supply that much more important. And because of the 1922 Compact and its interpretation in *Arizona v. California*, the reduced flows caused by climate change will mean that while California will continue to draw its full allotment, greater stress will be placed on Arizona and Nevada, which will not be able to draw their full allotments.⁴⁰⁷ Worse, how can the 1922 Compact itself even deal with the issue of diminution in flow to lower basin states caused by climate change?⁴⁰⁸ Article III(d) of the Compact provides that

[t]he States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.

But what if it is climate change that causes the depletion? While the answer to that question simply is not known,⁴⁰⁹ we might venture a guess based upon our assessment of federalism and our examination of overallocation and overuse: no one level of government, or one government among several of a particular level (i.e., the states), has the power to determine what water can be divided among the party states to the 1922 Compact. The inability of one level of government to divide water resources intensifies even the

“normal” fluctuations . . . exacerbated by climate change, whose most alarming likely effects include declining precipitation in the mountains that feed the river. Current estimates of climate-related reductions in the Colorado’s annual flow, by mid-century, range from about ten percent to about thirty percent. If those estimates turn out to be accurate, existing allocations will be even less meaningful than they are now. And, if the current drought lasts even half as long as any of the extended dry periods of the past, none of the current numbers will mean anything.⁴¹⁰

Some suggest that the United States Supreme Court could resolve the ambiguity in the Compact. But the problem is one of the incidence of power; if the Court takes up the task, it is wresting it from the hands of the water managers. The problem has been put with force: “Are we going to let guys and gals in black robes start making these decisions for us, or are we going to come together and maybe not have a perfect solution from everybody’s perspective, but a solution that works for

⁴⁰⁷ DEVERELL & SITTON, *supra* note 146, at 140–44.

⁴⁰⁸ See generally *supra* Diagram 1.

⁴⁰⁹ OWEN, *supra* note 145, at 22–23.

⁴¹⁰ *Id.* at 230–31.

everybody?”⁴¹¹ And even if the “guys and gals in black robes” did step in to provide an imperfect solution, given the ten orders to date in *Arizona v. California* is it likely doing so would provide a lasting and comprehensive approach? Moreover, given the limited nature of such litigation, that would be just one of Sutton’s fifty-one imperfect solutions. In both the Colorado and Murray-Darling Basins, there is “mounting evidence of climate change, and with it the prospect of an even more variable pattern of water inflows, higher temperatures and longer droughts.”⁴¹² Establishing some sort of solution is akin to “pushing a great big rock up a very steep hill to get the states to really get behind their work.”⁴¹³

Cooperative federalism seems an unlikely prospect in the face of the challenge of climate change for water supply and allocation. Thus, the tyrannical mix of federalism, water, and climate change works its perverse magic on the lives and livelihoods of so many in the Colorado and Murray-Darling Basins. Whatever the solutions to climate change may be, they will be made that much more difficult for the decision-making authority implementing them under the fragmented system of federalism. How, in a federal system, can the invidious role played by climate change with respect to managing the water resource be dealt with? In short, it cannot. We have already seen two such ongoing disputes which concern water—that between the United States federal government and California over the Coordinated Operation Agreement in the Central Valley Project/State Water Project and that between the Australian Commonwealth government and the Murray-Darling basin states over the NWI and the Water Act 2007 (Cth). Similar examples can be found in relation to climate change. And these federalism disputes over climate change can themselves lead to litigation producing new imperfect solutions; indeed, litigation provides no greater certainty as to which level of government can deal with the challenges of climate change.⁴¹⁴

A recent Canadian case illustrates the problems inherent in federalism litigation involving climate change. *In re Greenhouse Gas*

⁴¹¹ Stan. Univ. Rural W. Initiative, *supra* note 42 (quoting John Entsminger).

⁴¹² GUEST, *supra* note 112, at 198.

⁴¹³ *Id.*

⁴¹⁴ For example, in the United States an ongoing dispute exists between the federal government and California over which level of government ought to deal with automobile GHG emissions. Chester Dawson & Jennifer Dlouhy, *White House Nixes Automakers’ Plea for California Pact on Emissions*, AUTOMOTIVE NEWS (June 6, 2019, 7:10 PM), <https://www.autonews.com/node/988801> [<https://perma.cc/6LGR-K5G9>].

*Pollution Pricing Act*⁴¹⁵ was decided by the Saskatchewan Court of Appeal, and for which the Saskatchewan Minister of Justice and Attorney General have filed notice of leave to appeal to the Supreme Court of Canada.⁴¹⁶ The case starkly demonstrates the difficulty that any federal system has in dealing with the interface of managing water resources while also addressing the challenge of climate change. As in the U.S. and Australian Constitutions, no express provision of the Canadian Constitution deals with the environment generally, let alone climate change specifically.⁴¹⁷ Thus, in *In re Greenhouse Gas Pollution Pricing Act*, the Saskatchewan Court of Appeal was asked to determine whether the government of Canada had the sole power to deal with Canada's response to climate change through the enactment of the Greenhouse Gas Pollution Pricing Act. This Act would ensure a minimum national price on greenhouse gas emissions (GHG) to encourage their mitigation.⁴¹⁸ The government of Canada relied on seven heads of exclusive constitutional power to enact this legislation: the power to tax; the general trade and commerce power; the treaty power; the criminal law power; the emergency power; and the residual "[p]eace, [o]rder, and good [g]overnment" (POGG) power; and, possibly, the power to act in furtherance of respecting the existing treaty rights of Canada's First Nations peoples.⁴¹⁹ The court did not consider the possible provincial (the Canadian equivalent of state) powers which might be employed to deal with climate change.

A sharply divided Saskatchewan Court of Appeal held that the Act was within the constitutional authority of the Canadian government pursuant to the POGG power.⁴²⁰ Yet the majority wrote:

[The] fundamental reality is perhaps somewhat obscured in areas like the regulation of GHG emissions where the constitutional boundaries between federal and provincial [the Canadian equivalent of U.S. and

⁴¹⁵ *In re Greenhouse Gas Pollution Pricing Act*, 2019 SKCA 40 (Sask. R.). See also Reference re Environmental Management Act (British Columbia), 2019 BCCA 181; Reference re Greenhouse Gas Pollution Pricing Act, 2019 ONCA 544; Reference re Greenhouse Gas Pollution Pricing Act, 2020 ABCA 74.

⁴¹⁶ Notice of Appeal dated May 31, 2019; Notice of Constitutional Question dated May 31, 2019 (on file with the authors).

⁴¹⁷ Constitution Act, 1867 (U.K.), 30 & 31 Vict., c 3, reprinted in R.S.C. 1985, app II, no 5 (Can.); Constitution Act, 1982, being Schedule B to the Canada Act 1982, c 11 (U.K.); Canadian Charter of Rights and Freedoms, Part 1 of the Constitution Act, 1982, being Schedule B to the Canada Act 1982, c 11 (U.K.).

⁴¹⁸ Greenhouse Gas Pollution Pricing Act, S.C. 2018, c 12 (Can.).

⁴¹⁹ See Constitution Act, 1867, §§ 53, 91, 91(2)–(3), 91(27), 132; Canadian Charter of Rights and Freedoms, § 35.

⁴²⁰ See Reference re Greenhouse Gas Pollution Pricing Act, 2019 SKCA 40, para. 210.

Australian states] authority might be somewhat unclear and where there is at least room for both levels of government to legislate. Nonetheless, the basic point remains the same. The scope of Parliament's constitutional authority is not dependent on how or whether a province has exercised its own exclusive jurisdiction. Conversely, and putting the doctrine of paramountcy to the side, the scope of the province's constitutional authority is not dependent on how Parliament has or has not exercised its jurisdiction.⁴²¹

The minority, who held that the Act could not be supported as an exercise of federal power, nonetheless agreed with the majority concerning the nature of federalism and the division of powers as it relates to climate change.⁴²² The minority wrote:

[W]e would reiterate two points. First, we agree that all levels of government in Canada must take action to address climate change. The anthropogenic emission of GHGs is an issue of pressing concern to all Canadians and to the world. Second, Parliament has a number of constitutional powers, legislative means, and administrative mechanisms at its disposal to achieve its objectives in this regard. This [case] arises because Parliament chose not to avail itself of its established constitutional powers or to do so validly. Notwithstanding the existential threat of climate change, federalism in Canada means that all governments of Canada must bring all law-making power to bear on the issue of climate change, but in a way that respects the division of powers under the *Constitution*⁴²³

Put another way, both levels of government in Canada have the power to deal with some components of the climate change challenge and the mitigation of GHG. The situation is no different in either the United States or Australia. As with ecological flows, there is a fragmentation of the constitutional power to deal with climate change. Neither level of government has been given the sole power over the environment nor climate change, with both holding fragments of that power.

In the United States, the Supreme Court considered responsibility for climate change in *Massachusetts v. Environmental Protection Agency*,⁴²⁴ while in Australia, the High Court has yet to consider the issue, although it has dealt with the environment more generally in *Commonwealth v Tasmania*.⁴²⁵ In the former, without explicitly

⁴²¹ *Id.* at para. 67 (Richards, C.J., Jackson, J., and Schwann, J.).

⁴²² *Id.* at para. 476–77 (Ottenbreit, J., and Caldwell, J.).

⁴²³ *Id.* at para. 476 (Ottenbreit, J., and Caldwell, J.).

⁴²⁴ *Massachusetts v. Env'tl. Prot. Agency*, 549 U.S. 497 (2007); *but see* *Util. Air Regulatory Grp. v. EPA*, 573 U.S. 302 (2014).

⁴²⁵ *Commonwealth v Tasmania* (1983) 158 CLR 1 (Austl.).

considering the constitutional power of the Congress to enact such legislation, the Supreme Court determined that the United States Environmental Protection Agency could use the Clean Air Act⁴²⁶ to enforce pollution controls over GHGs.⁴²⁷ In the latter, the High Court found that the Commonwealth had power to act in relation to environmental protection pursuant to powers we have already seen with respect to water—those regarding external affairs, corporations, and the just terms acquisition of property.⁴²⁸ And while it is true that both California⁴²⁹ and South Australia⁴³⁰ have enacted legislation to deal with climate change (as, indeed, have many states in both countries),⁴³¹ the precise constitutional power upon which they rely in doing so is unclear. Neither the United States Supreme Court nor the High Court of Australia has explicitly addressed the power the states might have with respect to the environment or climate change.⁴³² Thus, as the majority in the Saskatchewan Court of Appeal concluded, both the United States Supreme Court and the High Court of Australia leave uncertain the issue of which level of government has which precise power to legislate for the environment and climate change. Like water, the constitution fragments the power of management, all of which is a problem:

The world's gathering environmental problems are deeply interrelated, and they can't be addressed effectively if they're addressed in isolation: water here, energy there, transportation somewhere else. But this sort of big-picture environmentalism is hard to define, much less to pull off, since even people who worry about the future of civilization tend to specialize.⁴³³

⁴²⁶ Clean Air Act, 42 U.S.C.A. § 7401 (Westlaw through P.L. 116-91).

⁴²⁷ *Massachusetts v. Env'tl. Prot. Agency*, 549 U.S. 497 (2007).

⁴²⁸ *Commonwealth v. Tasmania* (1983) 158 CLR 1 (Austl.).

⁴²⁹ *California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases Act*, 2018 Cal. Stat. 312.

⁴³⁰ Climate Change and Greenhouse Emissions Reduction Act (2007) (SA).

⁴³¹ See *Can American States Slow Global Warming on Their Own?*, *ECONOMIST* (June 29, 2019), <https://www.economist.com/united-states/2019/06/29/can-american-states-slow-global-warming-on-their-own> [<https://perma.cc/68B8-7MGA>]; *America Is Not Such a Laggard on Climate Change as It Seems*, *ECONOMIST* (June 29, 2019), <https://www.economist.com/leaders/2019/06/29/america-is-not-such-a-laggard-on-climate-change-as-it-seems> [<https://perma.cc/4N3P-FGJN>].

⁴³² Although, this may ultimately come to the United States Supreme Court as part of *Juliana v. United States*, No. 6:15-CV-01517-TC, 2016 WL 6661146 (D. Or. Nov. 10, 2016); *Juliana v. United States*, No. 18-36082 (9th Cir.). See Jacqueline Peel, Hari Osofsky, & Anita Foerster, *Shaping the 'Next Generation' of Climate Change Litigation in Australia*, 41 MELBOURNE U. L. REV. 793 (2000).

⁴³³ OWEN, *supra* note 145, at 257–58.

Proponents of the existing constitutional federal settlements might suggest that the solution is more cooperative or flexible federalism.⁴³⁴ But combine the constitutional jurisdictional uncertainty with respect to the environment and climate change and what we have already seen with respect to the power to manage water resources, and what *Reference re Greenhouse Gas Pollution Pricing Act* really demonstrates is the impotence of federalism in dealing with the complex challenges already found in the Colorado and Murray-Darling Basins. Further, climate change amplifies and magnifies these challenges. No one government can deal with either climate change or the river as a whole—what hope is there for any government to deal with both in an integrated way? Simply, there is little to no hope. Cooperative or flexible federalism is already revealing strains and fractures as it struggles to keep pace with ever-increasing demands on water, let alone what climate change is already doing, and will do, to those demands.

COMPARATIVE THEMES AND CONCLUDING REFLECTIONS

Three overarching themes emerge from our assessment of federalism when applied to the allocation of constitutional power over the control of water resources: fragmentation, Byzantine complexity, and, ultimately, tyranny. The fragmentation of power to control water resources between a national (federal) government, and states—as demonstrated by an examination of California and South Australia—produces, out of necessity, cooperative or flexible federalism. And from that intergovernmental “cooperation” emerges another layer of law—which we considered in our earlier companion article to this one⁴³⁵—dealing with the way in which governments allocate private power over water through property. That law, the water resources law of the various states in the United States and Australia—again represented here by California and South Australia—when combined with the constitutional allocation of power to create water law, produces a body of law characterized by Byzantine complexity, working a tyranny of ineffectual management on the water resource.

But what does it matter that we reveal this labyrinthine Byzantinism in American and Australian water law? One might legitimately ask whether this entire Article is nothing but an elaborate—complex!—

⁴³⁴ See, e.g., Adam Webster, *supra* note 42; Stewardson, *supra* note 42; Kingsford, *supra* note 42; Stan. Univ. Rural W. Initiative, *supra* note 42.

⁴³⁵ Babie, Leadbeter & Nikias, *supra* note 29.

thought experiment on the merits of federalism. Federalism appears here to stay. At the very least, the nature of the intergovernmental relationships that exist between the federal and state governments in both the United States and in Australia (and the seemingly endless hope that a political solution might be achieved through a never-ending schedule of meetings in an attempt to foster greater cooperation, or flexibility) strongly suggests that federalism is not going anywhere soon. That may be true, but we nonetheless believe that there is value in this exercise for three reasons.

First, and above all, by better understanding the problems federalism creates through its fragmenting tyranny, we are better placed to address them within the current federal structure in the United States and Australia. There are good reasons for wanting to attempt solutions, most prominent among them that rivers are, just possibly, people too! As innovative solutions in New Zealand and India demonstrate,⁴³⁶ if the federal democracies in the United States and Australia were to treat the major interstate watercourses, such as the Colorado and the Murray-Darling, as legal persons, this would go a long way toward treating

⁴³⁶ See Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 (N.Z.); *Salim v. State of Uttarakhand & others*, WPPIL 126/2014, High Court of Uttarakhand ¶ 19 (Mar. 20, 2017); *Miglani v. State of Uttarakhand & others*, WPPIL 140/2015, High Court of Uttarakhand ¶ 64 (2017); Erin L O'Donnell, *At the Intersection of the Sacred and the Legal: Rights for Nature in Uttarakhand, India*, 30 J. ENVTL. L. 135 (2018); Abigail Hutchison, *The Whanganui River as a Legal Person*, 39 ALTERNATIVE L.J. 179 (2014); Erin L. O'Donnell and Julia Talbot-Jones, *Creating Legal Rights for Rivers: Lessons from Australia, New Zealand, and India*, 23 ECOLOGY & SOC'Y 7 (2018). On environmental personhood, see Gwendolyn J. Gordon, *Environmental Personhood*, 43 COLUM. J. ENVTL. L. 49 (2018). Proposals for legal personhood have also been made in relation to the Colorado River in the United States and the Murray-Darling system in Australia. See Laura Spitz and Eduardo Moises Peñalver, *Nature's Personhood and Property's Virtues*, U. NEW MEXICO SCH. L. LEGAL STUD. RES. PAPER 2020-1, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3538522 [<https://perma.cc/8GX2-FEUD>]; Michelle Etheridge, *Murray River Nature Rights Proposed as Legal Protection for Watercourse*, ADVERTISER (Dec. 21, 2019, 1:42 PM), <https://www.adelaidenow.com.au/search-results?q=Murray+River+Nature+Rights+Proposed+as+Legal+Protection+for+Watercourse> [<https://perma.cc/H3FZ-XGU6>]. In 2019, the Bangladesh Supreme Court declared all of its rivers to be legal persons. Rina Chandran, *Fears of Evictions as Bangladesh Gives Rivers Legal Rights*, REUTERS (July 4, 2019, 12:26 PM), <https://www.reuters.com/article/us-bangladesh-landrights-rivers/fears-of-evictions-as-bangladesh-gives-rivers-legal-rights-idUSKCN1TZ1ZR> [<https://perma.cc/4UST-FRVC>]; Ashley Westerman, *Should Rivers Have Same Legal Rights as Humans? A Growing Number of Voices Say Yes*, NPR (Aug. 3, 2019, 8:02 AM), <https://www.npr.org/2019/08/03/740604142/should-rivers-have-same-legal-rights-as-humans-a-growing-number-of-voices-say-ye> [<https://perma.cc/AEN7-2SK4>]; see also Gabriel Eckstein et al., *Conferring Legal Personality on the World's Rivers: A Brief Intellectual Assessment*, WATER INT'L, TEX. A&M UNIV. SCH. L. LEGAL STUD. RES. PAPER, no. 19-30, 2019, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3431344 [<https://perma.cc/EAE3-8TUB>].

those rivers as they ought to be treated: as an integrated whole, incapable of fragmentation physically among multiple conflicting governments and multiple conflicting users. Put another way, treating interstate rivers as legal persons would, we hope, force those charged with management, both with public and private power, to attempt solutions that transcend the jurisdictional fragmentation wrought by federalism.

Second, the reality of federalism ought to remind us of the important fact that we live in an empirical world. Herbert Blumer, one of the founders of phenomenological empirical social research, wrote:

The aim of theory in empirical science is to develop analytical schemes of the empirical world with which the given science is concerned. This is done by conceiving the world abstractly, that is, in terms of classes of objects and of relations between such classes. Theoretical schemes are essentially proposals as to the nature of such classes and of their relations where this nature is problematic or unknown. Such proposals become guides to investigation to see whether they or their implications are true. Thus, theory exercises compelling influence on research—setting problems, staking out objects and leading inquiry into asserted relations. In turn, findings of fact test theories, and in suggesting new problems invite the formulation of new proposals. Theory, inquiry and empirical fact are interwoven in a texture of operation with theory guiding inquiry, inquiry seeking and isolating facts, and facts affecting theory. The fruitfulness of their interplay is the means by which an empirical science develops.⁴³⁷

As with our companion article on the nature of property in water resources,⁴³⁸ we believe that our assessment of federalism here, far from causing us to throw up our hands and surrender in the face of fragmentation and tyranny, ought to provoke us to seek greater understanding of the way in which it operates in the lives of those people affected by its operation: consumptive water users themselves. And, in the case of federalism, such understanding need not be limited to those who hold private power—property—in water, nor to those who wield the public power that allows the creation of private power in the first place. It ought to be extended to other stakeholders, too: most importantly, for the concerns of Indigenous or First Nations peoples and for the interests of those in other nations affected by the allocation of public and private power in the United States or Australia. It ought to include, too, consideration of the place of the environment and the

⁴³⁷ HERBERT BLUMER, *SYMBOLIC INTERACTIONISM: PERSPECTIVE AND METHOD* 140–41 (1969).

⁴³⁸ Babie, Leadbeter & Nikias, *supra* note 29.

impact of climate change in the lives of all interested parties and stakeholders. In other words, empirical research ought to search for answers to the operation of federalism and for solutions to the problems wrought by it by looking at the experiences of the holders of both private and public power over water, as well as of those stakeholders who seem otherwise to fall outside those two allocations of power. Only then can we ascertain whether federalism effects the optimal outcome in its distribution of governmental power over the water resource. Only then can we propose solutions that might actually produce positive outcomes for water users and stakeholders, including Indigenous and First Nations peoples, the environment, and those peoples of other nations.

This takes us to our third, and final, reflection as to why our assessment of federalism matters: the international dimension. Our review of federalism ought to force us to think of the ways in which the activities of governments and peoples within the United States and Australia might affect the peoples of other nations, such as Mexico in the case of the United States. In general terms, we think that the problems we reveal in this Article might allow us to identify further problems in other constitutional federal democracies that lawmakers might consider when reforming their own water resources law. Even more generally, the problems we have discussed in the theory and practice of federalism extend beyond the regulation of water. What we reveal in this Article about the United States and Australia may help to clarify a possible underlying reason for frictions in the politics of federal structures around the world. Though it may appear unrelated, it is possible to reflect on the current “Brexit” crisis in the European Union. Brexit may be conceived as a popular movement to take the United Kingdom out of a quasi-federal structure (the European Union) due to a deep distrust of the way in which that structure allocates governmental power. The problem we identify in water management in this Article may be extrapolated here. The point is this: by fragmenting issues and their management, we make their solution much more difficult; by further fragmenting, we only further divide problems (e.g., water allocation and the environment) that can only really be dealt with as an integrated whole. If Brexit represents the disintegration of quasi-federal governmental and economic structures,⁴³⁹ it then demonstrates forcefully the difficulty that follows for the ability to deal with

439 On the constitutionalized quasi-federal economic structures put in place by the European Union, see Paul O’Connell, *The Constitutional Architecture of Injustice*, in *ON BREXIT: LAW, JUSTICES AND INJUSTICES* 55 (Tawhida Ahmed & Elaine Fahey eds., 2019).

integrated policy challenges, which cannot be confined to political boundaries (e.g., water, or more generally, climate change).⁴⁴⁰

We think this latter point is deeply significant. If it is impossible for competing units of government intrastate, within one nation, to be able to work together in order to solve the problems of water allocation and use, what hope is there for that to happen internationally, among different states? This challenge, in many ways, draws together all the others because it is really the issue of conflict caused by climate change in places like Darfur, Guatemala, Syria, and Sudan.⁴⁴¹ It is the lack of equitable allocation of an already overallocated resource in the Colorado River. It is the failure to provide for First Nations and Indigenous cultural flows, where those interests cross international boundaries, and it is the failure to provide for ecological flows in the cross-boundary context. Each of these challenges are linked, inexorably, by climate change, which exacerbates and magnifies every other challenge. Indeed, once climate change exacerbates the scarcity of an already overallocated and overused resource at the national and then the international level, the threat of conflict over water, both within and between nations, looms ever larger.⁴⁴²

But, it may not be war between nations. As one of the epigraphs with which we opened this Article suggests: unless we use water more sustainably and manage it more inclusively, we may indeed see more water-related conflict *within* countries than *between* them.⁴⁴³ What these conflicts might look like remains to be seen, but events in Syria and Sudan, with conflict over scarce water resources, itself the likely outcome of scarcity caused by climate change, ought to give us pause for concern.⁴⁴⁴ And for that reason, we hope this Article issues an urgent call for a consideration not only of the role played by federalism in producing the conditions within which such conflict can occur but

⁴⁴⁰ See Jacob Aron, *Climate Change and Swing Seats*, 242 NEW SCIENTIST 5 (2019); Debora MacKenzie, *Partition Mentality*, 242 NEW SCIENTIST 23 (2019); *An Equal and Opposite Reaction*, ECONOMIST (June 6, 2019), https://infographics.economist.com/2019/GraphicDetailPortfolio/20190601_ECR_UKPB_081.pdf?fbclid=IwAR2RoPTj0rTLOLTDfkLJOn2qH4ryhDSbgCca7dNriPqxrPmkdRNeiGrCDzY [https://perma.cc/X4BR-USZJ]; *All the Colours of the Rainbow*, ECONOMIST (May 30, 2019), <https://www.economist.com/europe/2019/05/30/fragmentation-comes-to-the-european-parliament-it-might-improve-it> [https://perma.cc/L2U9-LRY7].

⁴⁴¹ See *How Climate Change Can Fuel Wars*, *supra* note 398.

⁴⁴² See *id.* See also REISNER, *supra* note 142.

⁴⁴³ Letter to the Editor from Scott Moore, Senior Fellow, Water Centre, Univ. of Pa., ECONOMIST (Mar. 21, 2019), <https://www.economist.com/letters/2019/03/21/letters-to-the-editor> [https://perma.cc/Z44G-MVKC].

⁴⁴⁴ See *How Climate Change Can Fuel Wars*, *supra* note 398.

also for a robust debate about the ways in which we might seek reform of the ways we allocate power, both public and private, over water.

It is of course true that the states, in both the United States and Australia, are doing something to address issues that transcend state and even national boundaries, such as climate change, and because they are, perhaps the outlook is not as gloomy as we might otherwise portray it.⁴⁴⁵ Indeed, it may be that Sutton's fifty-one imperfect solutions, far from states' rights dressed up in a new clothes, is in fact the best way forward for federalism when it seeks to address the environment. Still, the fact remains, federalism fragments power and makes necessary fifty-one *imperfect* solutions; the mere fact of cooperation, or flexibility, does not make it optimal. It is imperfect, indeed, tyrannical, when it comes to water. In choosing between Sutton's imperfect solutions and Bork's tyranny as the best descriptors of federalism in the management of water resources, we think Bork got it right: federalism is tyranny. But, that doesn't mean we need to reject outright Sutton's "solutions" to the problem. Indeed, Sutton's imperfection, if we must remain wedded to federalism, may be the only way forward.

⁴⁴⁵ See *Can American States Slow Global Warming on Their Own?*, *supra* note 431; *America Is Not Such a Laggard on Climate Change as It Seems*, *supra* note 431.

